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"LOODIANA," OR ANTHRAX FEVER, IN MADRAS.

BY "MADRASEE."

As I happened to have a well-marked case of "Loodiana Disease" under treatment when I received the December number of the VETERINARY JOURNAL, I have by this mail sent you, in accordance with your expressed wish, a bottle of blood taken from the animal immediately after death. I fear that decomposition of so large a quantity is inevitable, but capillary tubes are not to be had here, and I send this on the chance of its reaching you in a fit state for the experiments you wish to perform. I hope to get some tubes before I have another case of the disease, and you shall then have a further supply. I may tell you that I found *Bacilli anthracis* in abundance in the serosanguineous discharge from the nostrils during the life of the patient, and in the blood after death; but I failed to find them in the blood taken from the wound made for the insertion of the tube. This is not by any means the first time I have noticed this; indeed, I have never found them in the blood of a living patient, though often in the nasal discharge, which is almost always mixed with blood. At page 88, vol. xvii., of the *Quarterly Journal of Microscopical Science*, is a woodcut, which, on a somewhat larger scale, represents what I have seen largely mixed with mucus corpuscles. I have quite as often altogether failed to find any trace of these forms, but sometimes have observed very minute moving specks which, even with an immer-

sion objective Hartnack No. 10, I could make no more of than something like minute round particles, single and double—never more than double, but all very active and precisely similar to what one sees in any decomposing organic fluid, but these in blood from a live horse. I was much delighted to read the result of your investigations, and regret that I have not before thought of sending you a specimen of the blood to examine. My patient was dosed with Carbolic Acid, but in vain. I have rather a fancy for the Hyposulphite of Soda; but although I have seen recoveries after its administration, as well as that of various other remedies, or perhaps in spite of them, I have no confidence in any line of treatment I have either tried or seen employed by others. As to causes, my experience is that wherever the disease appears there will be found some want of drainage, or saturation of the soil with decomposing organic matter, or some accumulation of such in the vicinity. The grass-cutter's bundle, soaked in some stinking puddle to make it green and fresh-looking, is also, to my mind, a source of danger, and not of this kind only. You ask about cattle and sheep. It is hard to get information on this subject; but I can tell you I have just had to encounter a severe outbreak of Rinderpest amongst the cattle of the Municipality here. I have heard of no Anthrax, but that is no reason why hundreds of cattle may not have died within a few miles of me. Three years ago, when employed by Government to inquire into the causes of excessive mortality of cattle, I had opportunities of making dozens of *post-mortem* examinations, and saw cases of disease which, in horses, I should have called "Loodiana," but I preferred to designate them Anthrax. I also saw the carbuncular form of the disease as described in "Veterinary Sanitary Science and Police," vol. ii., p. 131. Gloss-anthrax is also common. Sheep, too, are frequently sufferers from anthracoid affections; and I was consulted in 1875, in consequence of the death of some natives who had skinned sheep dying of a disease of this sort in the South Arcot District. I find I have by me the description of the disease given by the Tahsildar, and you will see from the copy I enclose that it almost speaks for itself. Looking for it, I came across a description of cattle disease *apropos* to what I

have above stated, and I also enclose a copy of it. It is much to be regretted that Government will not make it worth some one's while to further investigate cattle diseases in India. Mr. Thacker did good work, but there is still much to be done, only Government wishes it to be done for nothing. If I can help by carrying out any experiments, let me know, and I will endeavour to obey instructions. I am certain, before long, to have other cases of the sort, as Anthrax is, I may say, enzoötic here. The catarrhal form of Influenza has given me much trouble here lately, and I hear it has also prevailed at Bangalore, Bellary, and Secunderabad. Simultaneously with the outbreak of Rinderpest above alluded to, Cholera made its appearance in Madras, but happily soon disappeared.*

REPORT.

To C. J. CROSTHWAITE, Esq., Agent, Sub-Collector of Bellary.

The Argi of B. Nursimha Charlu, Tahsildar of Gutty Talug.

I reported in my argi, No. 791 of 30th ultimo, that the cattle disease of a new type which had broken out at Cotteapeta, Congunapully, and Culloomady had ceased, and consequently I was not in a position to report its symptoms from personal observation. Having since learnt that a similar disease had broken out at Ootacul, I proceeded to the village on the morning of the 2nd instant; there were none suffering from the disease at the time, but there was a dead buffalo calf. I saw it, and it appeared to have died of swelling in the neck. I inquired to know the symptoms of the disease. The attack seems to begin with the discharge of saliva from the mouth; then the flanks palpitate, the animal breathes as if bellows were blown, swelling takes place from the liver up to the throat. Breathing through the mouth becomes obstructed, and then the animal begins to breathe by the nose. Death follows in an hour after this stage. One animal died from swelling from leg to neck. Death generally takes place within twelve hours after the commencement of the attack; the attacked never survive. It appears that eleven head of cattle died in this village of Ootacul, viz., three bullocks belonging to one Yeddooladoddy Tummanah. One died of swelling in the legs; it was

* Our correspondent is heartily thanked for his interesting communication. He does not mention the doses of Carbolic Acid administered, but we would suggest the necessity for giving the drug in large quantity and at frequent intervals—say, two to four drachms in a pint of linseed or olive oil, for a horse. This dose may be repeated in from four to six hours. In external swellings, subcutaneous injection of the same medicine, or Tincture of Iodine should also be employed.

Do animals which recover from the disease enjoy immunity from another attack; or if not, is that less dangerous?

Blood carefully dried on a bit of glass will serve our purpose very well, as will also—and perhaps better—a small portion of the nasal discharge. In the bronchial mucus from a horse that died of "Loodiana Disease," and which was forwarded to us by Dr. Evans, M.R.C.V.S., the *Bacilli anthracis* were present in myriads, whereas but few were found in the blood. We would recommend some inoculation experiments—rabbits, guinea-pigs, or mice being most convenient.—ED. *V. J.*

attacked at night and died the next morning. Two died of swelling in the neck; they were attacked in the morning and died in the evening.

Three head of cattle belonging to one Naraina Reddy. They were attacked at night and were dead by the following midday. There was no external swelling. Their tongues were protruding and saliva discharging all the while. The breathing was difficult.

Two belonging to Abala Reddy. These were attacked at night and died the next day. The animals abstained from food; saliva flowed; the flanks were palpitating and the breathing hard.

One buffalo calf belonging to Durgapuri Paravalappah. It was attacked in the morning and died the same evening. Saliva was discharging from the mouth; breathing was obstructed, and the neck was swollen.

One bullock belonging to Vadde Nágú. It died of swelling of the neck, attended with flow of saliva from the mouth.

The animals attacked by this disease remain sometimes standing, and sometimes lying down. They breathe as if bellows are blown, and abstain from food. Saliva flows; the flanks palpitate; at last slight swelling takes place from the liver up to the neck, and death immediately supervenes.

Extract from the Season Report of Chedambarum Talug, for October, 1875.

It appears that there was a loss of 350 cattle from "Veckai" (Rinderpest), Adaipan (Anthrax), etc., diseases in Komaratchy, and eight villages in the Kusba Ferka. As the Revenue Inspector's Report on this is wanting in certain particulars, it is returned and will be submitted as soon as received from him. Further, it is reported that in the village of Thatchakadoo a disease known by the name of "Therian"* is prevalent among the sheep. The sheep of the class known as *Padoovan Adu* attacked with that disease, die at sunrise and sunset. On those who flay such sheep the blood operates as a poison, and the fingers, hands, sides, and belly become swollen. It appears that a man died in this way in ten days; that another was attacked and recovered; that nine others are still suffering from it; that a man of the adjoining village of Aroomoolithevan also died from the same cause, and that seven bullocks and fifty-five sheep fell victims to the said disease.

I will send the usual statement as to the cattle attacked, etc., after inquiring of the village officers. I have issued orders to the village officers to segregate the infected cattle from the uninfected, and directed that no one should flay the dead sheep, or eat the meat, but that the carcases must be buried. I have also directed them to apply the medicine supplied from the Talug.

(Signed) P. VENUGOPAL, Tahsildar.

[We have delayed publishing the above important communication until some experiments had been made with the blood, which was received in due course, though from its odour it appeared to have undergone decomposition to some extent. This fluid was examined at the Brown Institute by Mr. Banham, but no *Bacilli* could then be detected, though there were many of what appeared to be *Micrococci*, and it was feared that its

* "Padasran" is Foot-rot, and it appears from another letter that the disease above mentioned first appeared among sheep with this disease (*Therian*), but also subsequently attacked others. The symptoms were described as a kind of fit suddenly occurring, and quickly terminating in death.—"*Madrassee.*"

semi-putridity had destroyed its virulency. However, a guinea-pig was inoculated with a small quantity of it on February 5th, and the creature continued in apparent good health until the 10th, when it died—an interval of six days, a most unusual period of latency. An examination was made of blood from the spleen, heart and lungs, and *Bacilli* were found in large numbers, but most numerous in that from the spleen. At the seat of inoculation a great amount of irritation had been excited, and the cutis had become united to the subjacent muscular tissue by a thick fibrous material, the surrounding tissues being infiltrated by a serous exudate.

Some of the blood from the spleen was put into fresh serum and placed in the incubator, in order to discover whether the long *Bacilli* rods would be developed, as would happen if the organisms observed were really the *Bacillus anthracis*. Finding the blood of the guinea-pig so infested with "rods," Mr. Banham was induced to re-examine the blood from Madras. He succeeded in discovering a few "rods" in it, and there appeared to be numerous "spores." The "rods" had evidently been overlooked in the first examination, and the *Micrococci* were, in all probability, anthrax "spores." Another guinea-pig was inoculated on the same day (the 10th March) with the same blood, and it succumbed on the fourth day. The *post-mortem* changes were similar to those noted in the other guinea-pig; though in the blood there were remarkably few rods, though this might be due to the circumstance, as is properly suggested by Mr. Banham, that this fluid was examined immediately after death. The spleen, however, contained numerous rods and spores. Mr. Banham had succeeded in developing four generations of these spores by transplanting them, or inoculating four successive quantities of fresh aqueous humour; and this cultivation might apparently have gone on *sans cesse*. The organisms were the real *Bacilli anthracis*.

This additional evidence as to the nature of the so-called "Loodiana Disease" is full of interest to the veterinary and comparative pathologist; and we may justly claim the credit of having established the fact beyond a doubt. But we gladly share this credit with our many Indian friends, who have so

kindly responded to our request for information, and the necessary material for experiments; no less than with our esteemed colleague, Professor Duguid, late of the Brown Institute, and his promising successor, Mr. Banham.

The scientific co-operation of the members of the veterinary profession alluded to above has been the means of not only finally settling the question as to the nature of a most destructive and obscure disease among horses in India, but of demonstrating that the lethal agent in this malady—a low form of vegetable life—can be transported from the plains of Hindustan, like an exotic plant, be successfully cultivated in this country, and prove as active in its deadly germinating powers in the body of our English animals as in that of the Arab horse, camel, elephant, buffalo, yak, or Brahmin bull. This is a startling result, and one which concerns more than the students of our own particular science. And this addition to scientific knowledge—an addition which may prove of the greatest importance—has not cost the country a farthing; it is the result of individual enterprise and sacrifice for which we cannot expect acknowledgement.

The question of cost rather debars us from carrying our experiments to their legitimate conclusion. The rabbit and guinea-pig are not altogether reliable creatures for inoculation; and it would be more satisfactory if we could resort to the larger herbivorous animals—the sheep and ox, and even the horse—in order to set the question of "Loodiana Disease"—as well as other forms of Anthrax—at rest for ever.—ED. V. J.]

IMPERVIOUS OS-UTERI IN A HEIFER.

BY GEO. GRAY, M.R.C.V.S., BAKEWELL, DERBYSHIRE.

ON August, 16th, 1877, I was urgently requested to attend to a heifer, the property of Mr. Childs, Mattock Green.

History.—Shorthorn; colour white; one year and eight months old; bred by owner; had been put to the bull six weeks, and three weeks previous to my visit; but the act of copulation on both occasions was followed by very unpleasant results: straining, with slight hæmorrhage ensuing, which was so severe

on the latter occasion that the owner determined not to again put her to the male. The day previous to my visit she was observed to be in œstrum, but for the reason stated nothing was done. The following morning she was found amiss, when my attendance was deemed necessary.

Symptoms.—Very restless, and straining incessantly; body bathed with perspiration; respiration accelerated; pulse eighty, and hard. I had my hand well oiled, and introduced it into the rectum to ascertain the condition of the uterus. The volume of the latter would compare with a uterus in the second month of gestation. I passed my hand up the vagina, but was unable to reach the os without causing the animal much pain, which was aggravated by the attendant having previously applied "Duff's oils," or some such rubbish, to the vulva and vagina, greatly irritating them.

Diagnosis.—Retention of the catamenia, probably due to some malformation of the os or anterior portion of the vagina, as no previous disease of the genitals had ever been observed.

Prognosis.—Unsatisfactory. Taking into consideration the high condition of the animal—the vascular excitement present, that an operation would be attended with great risk of blood-poisoning—the weather, too, being favourable to such a sequela—I recommended the owner to have her slaughtered, requesting him to preserve and forward the genital organs, complete, for inspection; this he promptly did. The uterus appeared externally, so far as size is concerned, to be in the second month of gestation. On making a longitudinal incision through the walls, fifty-four ounces, by measure, of a yellowish-looking fluid escaped, having the appearance and consistency of yeast mixed with beer. The mucous membrane of the body of the uterus was healthy, though pale; but in the right horn it appeared to the naked eye to be denuded of its epithelium, with slightly increased vascularity. The left was in a similar condition, but not to the extent of the right. Both ovaries were healthy. The right contained a *Corpus luteum* nearly an inch in diameter, of a dark reddish-yellow colour. The left contained a few Graafian vesicles—one especially far advanced, and almost ripe.

The vagina was healthy and natural; but about an inch from

the os two cicatrices, nearly an inch apart, were to be seen, which, I think, must have been caused by the bull's penis. The os was quite impervious, and, in my opinion, had always been so. The mucous coat of the uterus was as uniform over where the os should be as on any other part; and one could not tell, by looking at the internal surface of the uterus, where the os ought to be. I have the uterus roughly preserved.

Remarks.—I am sorry now I did not at the time have the contents of the uterus subjected to a microscopic examination, to ascertain their real nature, seeing that some of our eminent veterinarians reject the theory of menstruation in the lower animals.

If we accept the theory of menstruation (which I don't doubt), the quantity of fluid found in the uterus was much in excess of what the catamenial flow could have been in the time. Supposing the heifer had begun to menstruate at five months old, and to have come in heat regularly every three weeks up to twenty months (which is not very probable), she would have menstruated about seventeen times; and, reckoning two ounces at each time, this would make thirty-four ounces in all, leaving twenty ounces to be accounted for. Moreover, were the contents of the uterus like what we should expect from retention of the catamenia? On relating the case to Mr. Daniel, M.R.C.V.S., Down Street, Piccadilly, he suggested Scrofula as the cause of such a quantity of fluid. I demurred from this at the time (because all the internal organs were reported to me as being healthy), but recent observations have led me to favour the theory of Scrofula; although, when making the examination, I did not detect any lesions of a scrofulous character: these, of course, were quite unnecessary, as scrofulous matter may be formed without any accompanying lesion.

This case suggests two questions of physiological significance: 1st. Does the catamenia when retained, owing to impervious os or other causes, remain in the uterus unaltered, or does it undergo any change? 2nd. Does the continued presence of the retained catamenia in the uterus excite the mucous membrane to increased activity?

NOTES FROM AN INDIAN CASE-BOOK.

BY A. E. QUERIPEL, M.R.C.V.S., RESERVE REMOUNT DEPOT, HAPUR, INDIA.

THE following cases, which have occurred in my practice during the past year, presenting, as they do, some interesting features, I am induced to send them to THE VETERINARY JOURNAL for publication; and although they are forwarded at rather a lengthened period from the date of their occurrence, still I trust they may prove acceptable to its readers.

Case of Pyæmia arising from Strangles.

A "Waler" gelding was admitted as a patient into the Infirmary with febrile symptoms, difficulty in deglutition being a prominent characteristic. No glandular or other enlargement in the region of the throat could be detected, and the horse progressed very favourably for four days, at the expiration of which an unhealthy, greenish, muco-purulent discharge was noticed from the right nostril, the Schneiderian membrane being at the same time highly congested. Owing to the suspicious nature of the case, the horse was at once segregated and placed under close observation. The following day the submaxillary gland on the same side as the nostril affected became slightly enlarged and indurated. No change occurred for the next five days, and the enlargement, although constantly fomented, did not increase in size. On the sixth day, however, from the date of the horse's admission, the nasal discharge ceased, and suppuration speedily ensued, the abscess increasing so rapidly in size that in two days it entirely filled the submaxillary space. At this period the case appeared to be one of simple Strangles; the Schneiderian membrane had assumed a healthy hue, and although, of course, deglutition was a matter of difficulty, owing to the size of the abscess, still the appetite was good, and the horse eat heartily when fed on sloppy diet. In the course of three or four days I lanced the abscess, and was surprised to see that the pus, which was thereby given vent to, was quite *inspissated*. Of this there was about a pint. From this date the patient

progressed most favourably, continued to feed well, and, in fact, appeared convalescent. Tonics—quinine and iron—were given, as also occasionally small doses of Magnesia Sulph., for the purpose of keeping the bowels relaxed. Great care was also taken to prevent the orifice of the abscess closing. On the eighth day, however, after the abscess was opened, indurated tumours were noticed on the hock and fetlock joints. These at first were hard, but they speedily began to pit on pressure, and assumed the character of abscesses. Others subsequently appeared on the abdominal walls, and day by day increased in number and size, until no part of the body could be said to be free from them. The patient presented a most dejected appearance; the appetite was totally lost; the pulse almost imperceptible; the breath became fœtid, and it was evident that absorption of some of the deleterious matter from the pus contained in the submaxillary abscess had taken place, or, in other words, that the patient was suffering from Pyæmia. The animal died on the sixth day, or more than three weeks from the date of his admission to hospital. The *post-mortem* examination disclosed the formation of pus in all the tumours, also in the medullary portion of the kidneys. The left lung was healthy in comparison to the right, but was covered with petechial spots. The right lung was covered with these metastatic abscesses, the majority of them being close to the surface. The spleen and liver were healthy. The heart was soft and flabby, and in the left ventricle was found a large clot of sanious, purulent matter, very much resembling that found in other parts of body. I carefully examined the nasal chambers and sinuses of the head, but found them perfectly healthy.

The only question which now remains to be considered, and which it would be instructive to decide, is, when did the blood become tainted with the virus? The formation of these abscesses must, I think, be associated with a decomposition of the purulent matter contained in the primary one; and the question naturally arises, was it prior to or after the abscess was lanced? From the fact that the pus was found to be inspissated in character, it would lead one to suppose that the *liquor puris*, in which state pus always enters the blood, had

become absorbed before it was given vent to; but if this theory be correct, why should the tumours not have become developed before the eighth day after the operation? And again, all authorities who have written on the subject agree that pyæmic poison is more frequently developed after exposure to the external air, which can readily be accounted for by the action which atmospheric influences exert on the decomposition of animal fluids. To this latter hypothesis I naturally would lean, although the former would also appear to be feasible.

Case of Fatty Degeneration of the Muscles of the Hindquarter.

This horse, a "Waler," aged eleven years, met with an accident by slipping down whilst in the shafts. The exact seat of the injury was not clearly defined, but some lesion of the stifle-joint was supposed to have occurred. Antiphlogistic treatment was resorted to with no benefit; and when I first saw the patient, six months after the injury had taken place, he was very lame; in fact, was unable to impose any weight on the limb. After watching the case carefully for some time, I came to the conclusion that some lesion in the region of the hip-joint had occurred, and I presumed that bony deposits had formed around that joint. How wrong, however, I was in my diagnosis will be seen by the result of the *post-mortem* examination. One symptom, which in this case was noticeable by its absence, was frequently a cause of surprise to me—viz., atrophy of the muscles of the quarter. This, in former cases of this nature, had been an invariable symptom, and one would have imagined that if only from the fact that the patient had imposed no weight on the limb for a considerable period, wasting of the muscles would have certainly supervened. But, as before stated, such was not the case. This I particularly mention, as being likely to enable us to form a correct diagnosis in cases of this nature which may hereafter present themselves to our notice. Seeing that no further treatment would prove of any avail, the animal was destroyed, and on making a *post-mortem* examination the following lesions were discovered:—

No injury whatever to the bones entering into the formation of either the hip or stifle-joint was observable, but the muscles

around the former, especially the glutei, were extensively diseased. Great pallor was noticed on first removing the skin; and on investigating the changes which had taken place in the tissue, it was discovered that fatty degeneration of the muscular fibres had occurred, thus accounting for the absence of atrophy, and also for the loss of motor power of the part. The fibres of the muscles were easily broken down with the fingers. At first sight, on casually examining the muscles, I considered it a case of fatty infiltration, but closer observation plainly showed that the muscular fibres were also affected.

Green, in his "Pathology and Morbid Anatomy," says: "In striated muscle, both in the voluntary and in the involuntary of the heart, the fibres themselves are the seat of the morbid process, which consists in the conversion of the albuminous matter of which the fibre is composed into fat. The earliest stage of the affection is characterized by an indistinctness in the transverse markings of the fibres, which in many parts become studded with minute particles of fat. These gradually increase in number and in size, and are usually distributed somewhat irregularly within the sarcolemma. The fibres become extremely friable, and are readily broken up into short fragments. As the process proceeds, the transverse markings entirely disappear, and nothing but molecular fat and oil globules are seen within the sarcolemma."

The above case is a good example of the foregoing extract, and, as far as my experience leads me to believe, is one of rather unusual occurrence. We are all well aware of this morbid change taking place in the muscular structure of the heart, but in voluntary muscular fibre it is one that does not frequently come under our notice.

Case of Ventral Hernia treated by the Actual Cautery.

A young "Waler" remount was admitted as a patient to the Infirmary, suffering, as most of these horses do when first they join their regiment or battery, from Bilious Fever. This happened to be a case of unusual severity, and most careful treatment was required to combat the various symptoms which presented themselves. On the fifth day, the animal was very weak;

respiration very laboured; pulse 52, and very small; œdematous swellings of limbs, and, as in all these cases, there was great functional derangement of the liver. On the following morning, with the patient in this critical state, I regretted very much to find that during the night she had met with an accident, whereby a large ventral hernia had occurred. I returned the intestine, and placed a large pledget of tow on the part, binding it tightly with a broad surcingle; but on visiting the patient in the evening, I found that all the febrile symptoms were greatly aggravated. The pulse had risen to 70, and was wiry; the breathing very laboured, and the visible mucous membranes highly injected. In addition to these symptoms, partial paralysis of the hind extremities was noticeable. Taking all the circumstances into consideration, I determined to leave the treatment of the ventral hernia to such time as the more urgent symptoms had disappeared. I therefore removed the surcingle. The tumour from this time increased rapidly in size, but the febrile symptoms gradually subsided, and in the course of a few days had entirely disappeared. In about a week the patient moved the hind extremities freely; yet, as any operation for the treatment of the hernia would have necessitated casting the animal, and might have again brought about paralysis, I determined to wait a little longer. In the meantime, I placed the animal on low diet, and gave an aloetic purge. About a fortnight after the patient was convalescent, and about one month after the occurrence of the accident I cast her. At this time the tumour was about 18 inches in circumference at the base, and very pendulous. I applied the actual cautery—the lines being about one inch apart—and afterwards placed a cantharadine blister over the part. The following day there was great tumefaction of the surrounding parts, but the general health of the mare was good. Great attention was paid to diet, boiled barley being given, and no grass, which, in India, is the general substitute for hay. A fortnight after the date of the operation gentle exercise was resorted to, and a week after this the battery to which the mare belonged being about to march, I determined to send her with it, with instructions not to work her. At this time the tumour was only about three inches at the base. From this

time I did not see the animal, but was informed by the Principal Veterinary Surgeon, who saw her three months afterwards, that the tumour was greatly diminished in size, and that she was able to perform her duty. I have been induced to send you the history of the above case, as I think the simplicity of the operation, combined with its efficacy, will recommend it to other practitioners who may be called upon to treat similar cases of Hernia. In this instance, I think a truss would have been useless; the size of the tumour precluded the possibility of treatment by ligature; and although never tried by myself, yet I should imagine that the application of skewers beneath the skin, recommended by some authors, is a mode of treatment which would only be had recourse to as a *dernier ressort.*

PHYSIOLOGICAL TREATMENT OF VISCERAL INFLAMMATIONS.

BY NICHOLSON ALMOND, STUDENT, ROYAL VETERINARY COLLEGE.

THE great mortality attendant upon inflammation of the various viscera is well known to all students of medicine, and any facts, old or new, which, when applied, may tend to reduce the percentage of deaths from this cause, would be welcomed by all who take an interest in their profession.

The close relations existing between physiology and pathology are now fully recognized, and to insure the opinion of any particular line of treatment by those whose consideration is of value, it is necessary to show that the conclusions arrived at are based upon observed facts, experimental or otherwise, and the rational outcome of accurate reasoning.

Fortified by the consciousness that success will attend treatment having such a basis, the practitioner confidently applies it, and with the happiest results. Without such a basis there is no satisfaction in resorting to treatment at all.

In the following lines it is endeavoured to show that the treatment recommended is based upon the undoubted facts of physiology and pathology. The treatment is not new, for in a

partial manner it has been applied from the earliest times; yet, for lack of the rational basis which I have shown in the following paper, it has not commanded that universal adoption which the writer is persuaded it has in store for it, and deserves.

It has long been supposed, and recently it has been demonstrated, that there exists between the cutaneous and muscular systems on the one side, and the viscera on the other, a direct antagonism as regards their blood supply: to induce a rapid circulation in the skin and muscular systems is to cause a corresponding drain upon, and proportionately anæmic condition of, the viscera; and, on the other hand, to drive the blood from the cutaneous and muscular systems is to cause a congested condition of the viscera.

This antagonism appears to depend upon the different degree in which those systems are acted upon by a discharge of contractile influence from the vaso-motor centre: such a discharge affecting the vessels of the viscera in a much greater degree than those of the cutaneous and muscular systems, the skin being second in degree, and the muscular system in the least degree affected; the difference between the cutaneous and muscular systems being so little that they may be classed together, as compared with the viscera. This difference of response is due to the fact that the splanchnic nerves are composed wholly of fibres which convey only contractile influence, while those distributed to the muscles and skin are principally dilating fibres.

It is found that the excitation of a sensory nerve produces, by reflex action through the vaso-motor centre, dilatation of all the vessels in the region to which it is distributed, and contraction of all other arteries of the body. The contracting power of the arteries of the viscera being greater than that of those of the muscles and skin, overcomes it; and hence it is found that although the vessels of the irritated part are larger, and the flow of blood through them more rapid than at other times, the blood pressure is greater, and to this extra pressure is due the contraction of the vessels of the viscera.

The antagonism demonstrated by physiologists is fully confirmed by pathological observations, which show that the coldness of the superficies of the trunk and extremities is in

inverse ratio to the existing internal heat during visceral inflammations.

Recognising the antagonism that exists between the exterior and the viscera of the body, it is very clear that it will be advantageous to have recourse to the induction, by some means or other, of increased circulation in the superficies whenever inflammation of any internal organ exists, and the benefit may be expected to be co-extensive with cutaneous circulation initiated by a mild stimulus—that is to say, we should not be satisfied with the application of a stimulus over the region of the internal organ affected, as has hitherto in some instances been recommended, nor in my opinion should the selected stimulant be such as to inflame the dermis, thereby producing stasis and the concomitant reduction in quantity of blood circulating in the part, and withal making it tender, causing nervous irritability and discomfort to the invalid—conditions which should be most studiously avoided. But the stimulant should be such an one as can be applied again and again, as often and as long as required, viz., until either the symptoms abate or the animal succumbs to the disease.

All these qualities are found in "cold water packing"; thereby the necessary stimulus is given to the sensory nerves, which by reflex action cause the vessels to dilate, and that remarkably rapid flow of blood through them to which special attention has already been directed, and a proportionate drain upon the inflamed viscera, with contraction of their vessels, as shown by the accompanying increase in the blood pressure.

These results are purely physiological, and therefore, while its action continues, the animal experiences from it no influence except that which is beneficial; and, in addition to these excellent qualities, it possesses that of extensive application: it being practicable to apply this method at least to the whole of the trunk, and the limbs, being bandaged, they of course would participate in its general curative influence.

Lest some of my readers should be unaware what is intended to be conveyed by the term "cold-water packing," it will perhaps be as well to give a brief description of it.

The means whereby the cold-water, or, if it is preferred, very

weak solution of ammonia, is applied, is by bands of spongio-piline, which consists of felt coated externally by a waterproof covering to prevent a too rapid evaporation. The bands should be from fifteen to eighteen inches wide, sufficiently long to pass quite round the body, and also sufficiently numerous to envelop the trunk. These bands are saturated with water, the solution above referred to, or some other mild stimulant; and the superfluous fluid having been pressed out, they are applied to the body, the shape of which they readily take. They should be strapped close, and only require re-soaking when approaching to dryness, after which they should be again immediately applied. Only one should be taken off at a time.

The fluid soaked up by the spongio-piline soon takes the temperature of the body, and acts continuously as a mild stimulant to the peripheral nerves of the skin, whereby its beneficial influence is exerted. It rarely requires to be wetted oftener than night and morning.

Single bands about fifteen inches wide have been used with great advantage and success in chest affections, by various eminent practitioners; but if my reasoning is correct, they have only had a partial advantage, for it is herein shown that the advantage is in proportion to the extent of surface stimulated.

The application of this method has all the advantages of warm fomentations without the disadvantages of intermittence.

In my opinion it acts exactly as the fresh sheep-skin does when applied to the loins or other parts of living animals.

It may easily be applied locally, and would supply the moisture and retain the warmth to which the poultice owes its beneficial influence; and in many other ways it should be utilised for the relief of domesticated animals.

It will be seen that the relief which most impartial observers agree follows the application of blisters when internal inflammation exists, is in harmony with the views herein set forth, and the opinion that it is only of a temporary character confirmed; further, it may be inferred that the injury which they inflict fully counterbalances their beneficial influence, and it is contended that the treatment herein preferred is such as to maintain continuously the first and only beneficial effect of such agents, without their baneful influence following in its wake.

"BLACK QUARTER," "QUARTER ILL," OR EMPHYSEMA INFECTIOSUM (*RAUSCHBRAND*).*

BY H. AVRILL, VETERINARY SURGEON, BILLIGHEIM, GERMANY.

CASE I.—A cow had to be killed on October 7th, 1877, which had been suffering from Catarrh of the stomach for about thirty hours, unaccompanied by Fever. The symptoms presented by the animal were shivering, unsteady gait, especially with the posterior extremities, heart's-beat palpitating, and body bedewed with sweat. I found by *post-mortem* examination, an hour after death, that the blood in the superficial vessels was of a dark cherry-colour, tar-like, and a knife when immersed in it was of an analine-red hue.

On opening the abdominal cavity the omentum was found to be injected, the spleen was bluish-black in colour and five or six times its normal size; when cut it was soft, fluid, and also presented the peculiar analine-red tint. The small intestines varied in colour from a reddish to a dark blue. As I considered it to be a case of Anthrax, I sent for the district veterinary inspector, who confirmed my opinion.

I filled two glasses with some of the splenic pulp, and sent one to Mr. Göring, the other to Dr. Halenka, the veterinary district inspectors at the Agricultural Experimental Station at Speyer.

I inoculated two rabbits at four different places on the internal surface of both fore-arms with some of the splenic pulp, about one and a half hours after the death of the cow. One rabbit died twenty, the other thirty-five hours after inoculation, and both presented similar *post-mortem* lesions, viz.: the point of inoculation was dry and uninflamed; the surrounding tissue was swollen and œdematous, and when cut, a clear fluid, which impregnated the subcutaneous tissue, flowed from the surfaces; it was of a pale yellow colour, and here and there hæmorrhagic points could be detected. On opening the abdominal cavity, the veins were found to be distended with blood similar in appearance to that of the cow. In the heart and large arterial trunks the blood had formed a coagulum. The spleen was swollen, brownish-red,

* Translated from the *Wochenschrift für Thierheilkunde and Viehsucht* for January, 1879. By G. A. B.

and resembled in miniature the corresponding organ in the cow; the pulp, however, was somewhat firmer. The remainder of the abdominal viscera gave no indications of disease.

These inoculation experiments made my diagnosis somewhat doubtful, because the characteristic signs at the points of inoculation were not those usually found in Anthrax. Also, in the case of the cow, local Emphysema (*Rauschbrand-emphysem*) was wanting.

The specimens which I sent to Speyer, however, proved successful in producing exactly the same phenomena in a rabbit; and, moreover, Anthrax *Bacilli* were found in the blood.

Thus, it is fair to conclude that the cow died from "Quarter Ill" (*Rauschbrand*) without Emphysema, *i.e.*, Anthrax without external localization.

CASE II.—The following case I did not see during life. The history is as follows:—Three days before the cow became ill she calved naturally, and expelled the fœtal membranes a few hours afterwards. The disease (which the owner did not consider serious) lasted eleven hours, and I made an autopsy about ten hours after death. The cow was about five years old and in good condition. *Rigor mortis* slight, several of the joints being easily movable. The mucous membranes of the mouth and nasal chambers were pale, but the conjunctiva was injected. Bright-red blood flowed from the nostrils. The labia of the vagina were swollen. Subcutaneous Emphysema existed nearly all over the body, and gave a cracking or crepitating noise when the hand was passed over the skin. The abdomen was distended with gases (tympanitis). The mammæ presented a bluish-red colour around the base of the teats, the teats themselves being dark blue. The udder was tolerably filled with greyish-red coloured milk. When flayed, the cutaneous vessels were seen to be filled with bright-red fluid blood. The subcutaneous tissues were infiltrated with bloody serum and gas, the blood in the vessels being still fluid, black and tar-like. The muscles beneath were black or black-red, spongy and emphysematous, and crepitated when handled. The lymphatic glands of the shoulder and flank were swollen and yellow. The Emphysema and infiltrations were more marked on the right than on the left half of the body;

but this could in a large measure be accounted for from the fact that the body rested on that side for about nine hours before the autopsy could be made. When the skin was removed the odour of decomposition was perceptible. The abdominal cavity contained about a pint of a reddish-yellow exudate ; the peritoneum, stomach and large intestines were normal ; a portion of the ileum was reddened and felt thickened, and when cut the mucous membrane was found to be swollen and injected. The contents of the intestines were normal. The uterus was normal externally ; the mucous membrane, however, was of a dark-brown colour, and the organ contained about three quarts of fluid, which had a reddish-brown colour, was of a thick consistence and carrion-like odour. There were no remains of fœtal membranes, etc. The liver was anæmic, bright in colour, and when cut bubbles of gas rose from the surface. The gall-bladder was normal. The spleen was nearly normal in size and consistence. In the thoracic cavity about a pint of bloody exudate was found. The right lung was of a blackish-red colour, hyperæmic, œdematous, and filled with air. The left lung appeared healthy. The pericardium contained from three to four teaspoonfuls of bloody serum. The cardiac muscular tissue was dark red and soft. The blood in the ventricles and auricles was coagulated and dark in colour. The parietal pleura presented hæmorrhagic spots and streaks. The trachea was normal. The lymphatics situated in the cavities of the body were infiltrated. The deep-seated muscles of the posterior extremities also presented pathological changes, and appeared as if they had been boiled,—being disassociated, soft, marked with dark lines, crepitating, the separate bundles of muscular fibres being separated from one another by gaseous products (*Muscular emphysema*), and emitting a loathsome odour.

Portions of the muscular, lung and splenic tissues were examined microscopically. The muscular tissue (examined in a half per cent. solution of Sodium Chloride) presented distinct transverse striæ, and when the cover-glass was gently pressed on to the object numerous Anthrax rods were visible. They were straight, simple, and moved somewhat like the magnet needle of a compass. There were also numerous spherical bodies, with a

bright clear centre and dark borders, having a diameter similar to that of the rods, moving about the field. Blood corpuscles were few. Anthrax rods were not found in the splenic pulp nor in the lungs.

All the tissues examined gave an acid reaction. When the muscular tissue was washed with water, it became quite pale and white ; the darkest (or most diseased) portions became so much quicker than the lighter (normal) muscle. The muscular tissue, which was hermetically sealed in water for twelve hours, presented the same microscopical appearances as that described above. The motionless beaded *Bacilli*, which are described by Prof. Feser, were not detected. After the muscle had been washed, it had an acid reaction, and crepitated when pressed between the fingers. The same was also observed after a further twelve hours' soaking.

No definite cause can be found at present for this malady ; but it appears to be worthy of notice, that as the cow had recently calved, infection might have taken place by means of the generative organs.

Editorial.

VETERINARY SANITARY SCIENCE IN INDIA.

We have from time to time drawn attention to the existence of serious animal diseases of a transmissible character in our Indian empire, and the great necessity for adopting active measures for their suppression, as well as for the investigation of those whose nature and mode of origin and propagation are still obscure.

The great value and importance of the various domesticated animals in India, and the grave inroads which these maladies have frequently, in recent days, made among them, would surely have impelled an intelligently-directed government to take steps for their protection from preventable diseases. But we regret to observe that very little indeed has been done in this direction, and that every year these scourges appear to be on the increase, until now some of them are assuming quite formidable proportions. Only a very few years ago we had occasion to institute inquiries as to the presence of certain contagious disorders among animals in India, and we then learned that Glanders was all but unknown in that great country ; indeed, it appeared to be so rare that its existence was denied by some correspondents. But such is not the case now. For reasons which are not far to seek, the loathsome

affection has become so prevalent as to threaten great loss and embarrassment, not only to individuals, but to the public service; and if nothing more is attempted than has been already ventured upon, it will not be long before the destructiveness of the disease is well known throughout the length and breadth of the three presidencies, and prove to be a deadly scourge, not to the equine species alone, but to mankind. As it is, Glanders is so rife in the Punjab that the most alarming reports reach us from different sources, and the army operating in Afghanistan is even experiencing inconvenience from its prevalence. Besides outbreaks in different cavalry regiments, we learn that a battery of artillery proceeding on active service had to suspend its march in consequence of the horses being affected with Glanders and Farcy; a large number of horses in the Governor-general's body-guard have been shot, and the remainder cannot move because of infection; the contagion is rampant among the dâk animals throughout the country, and very many have been destroyed; it has manifested itself in the valuable Saharanpore stud; Calcutta and Ballygunge are looked upon as disease-centres, whence the germs are transported far and wide; the dâk-gharry or public carriage stables along the great highways are dangerously tainted, as are also the horse-boxes on the railways; glandered horses and ponies wander about the roads and straggle into camps among troop-horses; and we have a report that Burmah is invaded by the pestilence. The contagion exhibits a very unusual degree of virulency, which greatly facilitates its dissemination; and this is further increased by the absence of proper supervision, as well as by the conduct of the native owners of diseased animals—the lower classes of whom have established a system of beacon-fires to give notice of the approach of the Inspecting Veterinary Surgeon (when there chances to be one), when all ponies are immediately hurried away into the contiguous jungle. No amount of warning will teach these people that the disorder is equally fatal to human beings as to animals.

Our columns testify to the havoc made in India by anthracic diseases, which Government will do nothing to throw light upon; and there are bovine distempers whose nature is well known, whose ravages are only too manifest, and yet against which there is no organization to contend. For instance, the Cattle Plague has its home in India, and almost yearly devastates one or other region. At the present time there is a probability that it will prove more than usually formidable and troublesome, as it has shown itself towards the base of our operations against Cabul, and may compromise not only the transport, but also the food supply of our troops. The correspondent of the *Standard* telegraphs from Rawul Pindee on April 7th:

"The Cattle Plague, which has for some time committed serious ravages here, has suddenly so increased in virulence that it threatens seriously to embarrass the commissariat. The cattle are dying in scores; and as the country round has been already drawn upon to its full extent for draught cattle, the waggons drawn by the animals which have succumbed cannot be taken on until fresh bullocks are brought from down the country.

"A Commission of Inquiry has been appointed and is now travelling along the road; but although its members may collect the statistics of the loss which has taken place, there is but little hope that they will be able to gather any information which will enable them to suggest a method of checking the progress of the pest.

"As for myself, the break down in the transport arrangements has arrested my progress to the front, and I see no prospect of getting forward for some days at least."

Thus we see what a grave responsibility rests upon the Indian Government, because of its neglect of Veterinary Sanitary Science, and how this neglect operates upon the material prosperity of that country and upon our influence there. The authorities have but a very faint conception of their duties in this respect, and seem to allow sanitary matters to trouble them to a very slight degree. The Indian army is anything but effective, so far as the Veterinary Department is concerned; and as we showed in our issue last month, the state of affairs in the columns in Afghanistan, where there is no veterinary inspection or control, is most discreditable to us as a civilized, civilizing, and humane people. The reports which are forwarded to us as to the cruelty inflicted upon the unfortunate transport animals, through ignorance, neglect, and probably something worse, are too horrible and disgusting for publication. Suffice it to say that among the camels alone, of seventy lying dead at Quetta, twenty-six were only two years old—a per-centage of more than thirty-seven unfit for service when purchased. Very many of the female camels were with young, and died from the effects of abortion. The treatment to which the expeditionary animals have been subjected is beyond description, and thousands have perished for lack of veterinary supervision, and through the ignorance of the transport officers, who, nearly all belonging to infantry regiments, know nothing of the management of the creatures entrusted to their care. Not a veterinary surgeon has been attached to the transport, which numbers thousands of camels, bullocks, mules, ponies and elephants, and the loss from a money point of view is, therefore, out of all proportion to the small amount which is saved in this way. But this terrible mismanagement might have had a most serious result for our army, if an enterprising and skilled enemy had opposed our generals, instead of one which possessed neither of these qualities. As it is, one column could not proceed beyond Kandahar, evidently owing to its transport animals having been expended; and the successful movement, for any length of time, of the small army composing the other columns is somewhat problematical.

In support of our statement, based on unimpeachable authority, we quote from a private letter from an officer with General Stewart's army, and which appeared in the Lahore *Civil and Military Gazette* for March 19th:—

"I assure you it surpasses anything you ever heard or read about, and the farther we march the worse things seem to be. Thousands (I use the word advisedly) of dead camels in every stage of decomposition lie along the road. I do not exaggerate when I say that there is at least one in every fifty yards from Quettah to Kandahar. Around encamping

grounds they lie simply in noisome heaps, and the stench that poisons the air is something horrible. It seems that it is nobody's business to bury these dead carcases, and as they go on accumulating, it is not hard to prophesy what must be the inevitable result of so total a disregard of all laws of hygiene as soon as the hot season sets in. I am simply appalled at the state of things as I see them, and am filled with astonishment that it can exist under a civilized Government. What are the Sanitary Inspectors doing? Cholera or the Plague itself must certainly follow all this, and I suppose when some terrible epidemic does break out, Government, and those responsible, will take some steps to endeavour to mitigate an evil which should not have been neglected so long."

Owing to ignorance, and the prejudice begotten of ignorance, and to a short-sighted and by no means enlightened policy on the part of authorities in India, the position of Veterinary Medicine and Sanitary Science both in the Army and out of it is extremely unsatisfactory, and the result is heavy loss, inconvenience, and even danger and disaster to the public service. The present state of affairs urgently demands investigation by the imperial Government; for when we consider the immense interests at stake, and the calls the future will undoubtedly make upon this country, through its relationship with India, it is intolerable that such losses and risks should be longer submitted to, when they might be easily and cheaply obviated by intelligent administration and ordinary forethought.

ANTHRAX IN PREGNANT ANIMALS.

PROFESSOR FESER, of the Munich Veterinary School, in the *Wochenschrift für Thierheilkunde und Viehzucht* for February of this year, alludes to the fact that Branell and Davaine had remarked that the blood from the fœtus of an animal which had died of Anthrax did not produce the disease by inoculation of other healthy creatures, while the maternal blood readily did so. Long before the nature of the disease was so well understood as it is at present, attempts were made to account for this peculiarity by pointing out histological dissimilarities between the tissues of the mother and fœtus. While in the blood and all the organs of the mother the peculiar rod-shaped bodies were found, they could never be discovered in the *Liquor amnii*, nor in the blood or tissues of the fœtus; whence it was justly concluded that these organisms were the active agents in the production of Anthrax. But since Koch, of Wolstein, has incontestably proved that Anthrax is a parasitic disease—all the symptoms and lesions being due to the rod-shaped bodies—Feser has adopted the opinion that the placenta of the fœtus is free from the virulence, the maternal placenta acting as a physiological filtering apparatus through which the Anthrax organisms cannot pass. As a practical illustration of this notion, Feser adduces the following experiment:—On November 10th, 1878, at 9.30 in the morning, a pregnant ewe had injected into the side of its chest, by means of a syringe, one-tenth cubic centimeter of Anthrax blood, from a rabbit which had died of the disease. The sheep succumbed to the malady during the night of November 11th and 12th; but an hour or two before death it gave birth to a strong healthy lamb, which was subsequently reared

for more than four weeks on cow's milk given by means of a child's feeding bottle. This lamb remained in perfect health, and not only were the *post-mortem* and the microscopical appearances of the ewe's tissues decisive as to the presence of Anthrax, but several inoculations of rabbits with the blood and spleen were followed by positive results.

Here we have the interesting fact established that a pregnant animal, suffering from blood-poisoning—if we may use the term when treating of Anthrax—immediately before death giving birth to an uninfected and healthy progeny: proving that the placenta offers an insurmountable obstacle to the transmission of Anthrax from an infected mother to the fœtus, though the blood of the parent may swarm with *Bacilli*, and prove deadly when inoculated on other animals, or perhaps even on the same fœtus after it has been born.

CONTAGIOUS PLEURO-PNEUMONIA IN HOLLAND.

THIS disease has considerably diminished in extent in South Holland during the course of 1878. No cases had occurred in the Rhenish portion of that province during the last months of the year, though previously it was most infected. It was therefore considered that the scourge had been totally suppressed. The application of the law of August 8th, 1878, had been productive of the best results, *and the favourable effects of inoculation, employed as a preventive measure, had been everywhere most marked.* After the inoculation of 35,000 head of cattle within the four months, and throughout the extent of an isolated, infected *circle*, the disease list fell so rapidly that hopes were entertained that the malady would soon be quite extinguished.

At Schiedam—one of the most contaminated communes, where the authorities were previously compelled to slaughter about a score of diseased cattle every week—towards the end of the year there had only been one or two cases, and during the last week in the year none had been reported—a circumstance which had not been noted for forty years. This result is attributed to preservative inoculation and slaughter of the diseased.

THE TRANSMISSIBILITY OF SWINE PLAGUE.

TO Klein we owe the fact that Swine Plague can be transmitted, though with some difficulty, to other than the pig species, as he successfully inoculated mice, rabbits, and guinea-pigs with matter from diseased swine. In an editorial article in the *National LiveStock Journal* of Chicago (written, we presume, by Professor Law), is the announcement that a rabbit and a merino wether were for the third time inoculated from sick pigs, the two previous inoculations having proved harmless. "On this third occasion, however, both became decidedly ill, and the diseased products from the rabbit having been inoculated back on a sound pig, this was in due time seized with the disease." The writer adds that the disease in the wether was not tested in the same crucial manner, by inoculating its morbid products back upon the swine, though he hoped to perform the experiment.

The disease in the sheep ran a mild course.

From the circumstance that the disorder can be conveyed beyond the porcine tribe, an endeavour has been made to prove that it is not a plague, and that therefore the name we have given it, Swine Plague, is unsuitable, that of Hog Cholera being offered as a better designation. We fail to see that because a most fatal and infectious scourge can be transmitted to other species, that it is any the less a Plague. Those who object to the most simple and

least misleading name we can find for the disease in question, appear to forget that Cattle Plague is not limited to the bovine tribe, but can be communicated to a greater number of species than the swine malady—so far as our present knowledge extends. To designate the latter "Hog Cholera" is to commit even a greater blunder than to term it "Typhoid," as it has no clinical or pathological analogy to Cholera, and the name would be simply nonsensical and misleading. The disease is as much a plague of swine as Cattle Plague is of oxen, and to give it any other popular name than "Swine Plague" is to make confusion worse confounded and violate the principles of comparative pathology.

Reviews.

MANUEL PRATIQUE DE L'EXPLORATION DE LA POITRINE CHEZ LES ANIMAUX DOMESTIQUES. By F. Saint-Cyr. Paris: Asselin and Co. 1879.

The name of Professor Saint-Cyr is so favourably known to the veterinary profession, especially on the Continent, as that of a most indefatigable writer and scientific observer and investigator, that any new treatise from his pen is certain to receive a hearty reception, and prove to be a welcome addition to those purely technical works which give an exalted position to our science, while they facilitate the practice of our difficult art. Saint-Cyr's practical treatise on the exploration of the chest of the domesticated animals will prove a valuable guide to those members of the profession who are determined to establish their clinical practice on the most exact physiological and pathological investigation. It is the first and only special work on the subject; for though in the classical writings of Delafond, Lafosse, and other French authorities, the exploration of this important cavity has received careful notice in connection with its diseases and that of the organs it contains, yet it has not received that exhaustive and complete treatment which it deserves. The author has had ample opportunity for carrying out investigations and experiments in this direction during twenty-eight years of uninterrupted clinical study at the Lyons Veterinary School, when he had also every facility for studying and following the various phases of the numerous chest diseases daily offered to his observation, and when, as he states, he auscultated and percussed a very large number of patients, comparing the stethoscopic and pleximetric signs with those furnished by other methods of investigation. He also profited, on every available occasion, to rectify and verify, when necessary, the diagnosis formed during life by an inspection of the cadaver.

In this way a considerable mass of materials was accumulated, which really forms the staple of the book, this being almost a synthetical *résumé* of his labours, completed by a careful study of the best writers on veterinary and human stethoscopy and pleximetry. The result is eminently satisfactory. The physical methods—percussion and auscultation—which must be resorted to for examining the chest of the domesticated animals in health and disease, are described fully and

clearly, and the varying results they yield under diverse conditions are succinctly enumerated and accounted for. Like all those who have practised percussion regularly and attentively, and who are more desirous of acquiring accurate information than making a display before owners or attendants on animals, Professor Saint-Cyr places far more confidence in the hands alone than in the intervention of instruments—the right hand serving as a percussor, while the left plays the part of a pleximeter.

In addition to the two sections in which percussion and auscultation are so admirably treated, Saint-Cyr has added a third on Pneography, which is full of information and interest. The mechanical apparatus invented by Wierordt for the registration of the pulse and, later, the respiration, known as the "sphymograph," had been in use for some years before Marey, in 1865, introduced the "pneumograph," which has been employed so largely in physiology and pathology, and by veterinarians like Chauveau, Toussaint, and Arloing. But Rodet, the late director of the Lyons Veterinary School, had been at work for a long time in devising an instrument which might render the diagnosis of "broken wind" more apparent, and in 1868 he presented two small instruments—the "pneoscope" and "pneograph" to the Medical Society of Lyons. Unfortunately, however, owing to the commencing illness to which he at last succumbed, he could not continue his investigations with these apparatus, and charged Saint-Cyr to carry them on to the best of his ability; and this he appears to have done most conscientiously. By means of Rodet's pneograph, the respiratory movements are most accurately delineated, and the utility of this application of the graphic method to physiological and pathological research is well demonstrated in the manual now before us.

To those members of the profession who read in French and care to study the scientific aspect of Veterinary Medicine, Saint-Cyr's book will be treasured as a most instructive assistant and guide in the difficulties attending the exploration of the chest of animals, and a trustworthy work to which even those who are no mean adepts in this line may often advantageously refer. Appended to each section is a good bibliography, containing the most important treatises which have already appeared on the different subjects. Strange to say, however, the very excellent "Lehrbuch der physikalischen Diagnostik der Krankheiten der Hausthiere," by Professor Vogel, of the Wurtemburg Veterinary School, and published at Stuttgart in 1874, is not mentioned—an omission which we regret, as we consider this text-book a credit to German veterinary literature, and equal to anything of the kind in human medicine. We may add that Saint-Cyr's manual is well illustrated and got up, the tracings of the respiration being particularly distinct and telling.

ANATOMY OF THE INDIAN ELEPHANT. By L. C. Miall and F. Greenwood. London: Macmillan and Co. 1878.

The elephant occupies such an important position as a pageant, sporting, and labouring animal in our Indian empire, that it well

deserves the attention of those members of the profession who are now serving in, or are likely to visit that part of the world. As nothing is taught of its anatomy at our schools, and as hitherto there has not been anything written on the subject easily accessible to veterinary surgeons desirous of making themselves acquainted with it, the only opportunity of gaining information has been by making *post-mortem* examinations or partial dissections of the carcases of animals which may have chanced to die in a camp or cantonment. These, not being pursued on any systematic plan or in a complete manner, cannot but be unsatisfactory, especially when we remember the great differences between the structure of this and other quadrupeds. The "Anatomy of the Indian Elephant," by Professors Miall and Greenwood, was originally contributed to the *Journal of Anatomy and Physiology*, and a perusal of the description of the structure of this huge and interesting creature then gave us much pleasure. The present memoir is merely a reprint from that publication, with the addition of a brief notice of the male generative organs; and in its now convenient and portable form it will doubtless receive more attention, as it will be more valuable to the specialist. For the benefit of future students there is a list of the principal memoirs on the anatomy of the elephant, while there are also numerous instructive illustrative notes, woodcuts and lithographs. Notwithstanding what has been accomplished in completing the anatomy of this mammoth beast, which weighs something like three tons, much yet remains to be done. From its size, and the great infrequency of opportunities for making dissections in Europe, extremely few anatomists have been able to undertake dissections. There is, therefore, a good field for distinction to those of our colleagues in India who care to enter on this subject; and to them, and also to those who wish for a guide in pathological dissections, we sincerely recommend the cheap little memoir issued by the enterprising firm of Macmillan and Co.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 10TH, 1879.

Present:—Gen. Sir Frederick Fitzwygram, Bart. (President), in the Chair, Messrs. Batt, Blakeway, Collins, Cuthbert, Dray, Fleming, Greaves, Moon, Taylor, G. Williams, and the Secretary.

Correspondence.

Letters were read from Professor Williams, and Messrs. Withers, Cox, Balls, Morgan and Proctor, regretting their inability to attend the meeting.

A letter was read from Mr. Menzies, stating that he returned the petition, as he was sure the Directors of the Highland and Agricultural Society would object to sign it in its present form. He also returned the draft diploma, in which he did not see anything requiring alteration. The petition was after-

wards returned along with the form of diploma which had been approved by the Directors, and the same had been sent to Mr. Loch, signed and sealed both by the Royal College of Veterinary Surgeons and the Highland and Agricultural Society.

The PRESIDENT explained the alteration that had been made in the supplemental charter, which was confined to a portion of the recital.

The Secretary read the following letter from Mr. Rice :—

GAYFIELD HOUSE, EDINBURGH ;
March, 1, 1879.

W. H. Coates, Secretary R.C.V.S.

SIR,—At date 19th ultimo I mailed to you letter, giving date regarding time of my entering the New Veterinary College and the American University from which my M.D. was taken. In letter of ante-date I begged early reply, telling me whether or not the M.D. could be recognised by you. At time of writing I am entirely without other information than that which I then possessed : am I to be wholly ignored, or will you extend to me the great kindness of information which will enable me to act understandingly?

I am, &c.,
F. E. RICE.

The SECRETARY stated that he had called at the Royal College of Surgeons, and also at the College of Physicians, and found that they did not recognise "the Vermont Institution."

Mr. FLEMING thought that Dr. Rice and the profession would see that the Council had not acted unfairly, but simply on information obtained from two of the most trustworthy and respected bodies in this country.

The PRESIDENT pointed out that Bye-law 47 provided only for students holding a diploma of any medical examining body recognised by law being eligible. He consulted Mr. Loch on the subject, and he was clearly of opinion that the Council had no power to admit Mr. Rice with any qualification which was not recognised practically by the College of Surgeons or the College of Physicians. He was sorry for it, but Mr. Rice could not be admitted under the existing bye-law.

A letter was read from Mr. Patrick Byrne, of Drogheda, a candidate for the diploma of the Royal College of Veterinary Surgeons, enclosing a certificate from Professor Gamgee, dated 1867; and requesting to be granted the same indulgence that had been given to Mr. Dick's pupils on a former occasion.

The SECRETARY stated that, on referring to the reports of the different examinations, he found that Mr. Patrick Byrne had never put in any appearance at any examination. The question was, whether the certificate could be admitted or not.

Mr. FLEMING did not think Mr. Byrne was eligible, inasmuch as the examining body was now differently constituted to what it was at that time. If he was to be examined a special board would have to be assembled.

The Secretary was instructed to reply to the effect that the applicant was not eligible for final examination.

A letter was read from Mr. William Dring, of Brixton, relative to his son, who had been rejected three times during his examination, and requesting that he might be allowed to present himself for re-examination in July next.

The PRESIDENT said he could not be presented for examination.

Examinations.

At the several meetings of the Court of Examiners, held for the "Pass Examination," on March 31st, 1879, nine students were rejected. On the

1st April six passed and three were rejected. On the 2nd of April twelve passed, making a total of eighteen passed and twelve rejected.

The PRESIDENT explained that the number of rejections was due to the old students coming up under the old system. As regards the three years' students, the result was very satisfactory indeed.

At a meeting of the Court of Examiners, held on April 3rd, for the "Second Examination," nine passed. On the 4th of April eight passed and three were rejected. On the 5th of April nine passed, and on the 7th of April seven passed, making a total of thirty-three passed and one rejected.

At a meeting for the "First Examination," held on the 8th of April, 1879, eight passed and four were rejected. On the 9th seven passed and three were rejected, making a total of fifteen passed and seven rejected.

The obituary notice was read.

Mr. FLEMING proposed the appointment of a small committee to consider a new form of register, the present one being, in his opinion, very defective.

Mr. COLLINS thought that the same committee which drew out the present register might revise it also.

The SECRETARY said that there would be a new committee appointed for the register in June next, when the committees for the year were appointed.

Mr. TAYLOR pointed out that in the proposed supplemental charter it was provided that the votes could be given either personally or by voting papers. He thought it would be a benefit to the College if every one were to vote by a voting paper only, as it would save trouble and turmoil at the annual meeting.

The PRESIDENT said it was not too late to make any alteration.

Mr. TAYLOR said that great inconvenience sometimes occurred when he was appointed scrutineer, in consequence of his not being present in the room to vote on certain questions on which he intended specially to vote. He moved—"That at all meetings of the said College all votes that are given for the election of the Council by members of the College must be given by voting papers in the form defined in the bye-laws of the said College, such papers to be transmitted under cover to the secretary of the said College not less than three clear days prior to the day on which the election is to take place."

Mr. DRAY seconded the motion, which was carried.

It was arranged that Mr. Loch be instructed to insert in place of Clause 3 in the Supplemental Charter, one which would carry out the views expressed in the above resolution.

Mr. FLEMING presented to the Museum a sample of "Warnecke's Horse Cakes," which was, he said, very valuble as a feeding stuff for horses during war.

Dr. VOELCKER presented a report on "The Adulteration of Food," and Professor Brown "The Annual Report of the Veterinary Department of the Privy Council Office, with an Appendix."

On the motion of Mr. DRAY a vote of thanks was awarded for the presentations.

The SECRETARY announced that Mr. Wm. Stanford Harrison, of Hertford, had forwarded by rail an interesting specimen of a "calf's head."

Mr. FLEMING moved a vote of thanks to Mr. Harrison, and that application should be made for a history of the case in order that it might be entered in the Museum book.

Mr. DRAY seconded the motion, which was carried.

A letter was received from Mr. Jenkins, secretary of the Royal Agricultural Society, enclosing a printed report on the subject of the letter from the secretary of R.C.V.S., dated March 25th, in regard to the recommendation of the Examiners of the Royal Agricultural Society's prizes.

(The report will be found in the proceedings of the Royal Agricultural Society, which appears in the present issue of the Journal.)

The report was adopted.

The SECRETARY read the following letter from Professor McCall:

VETERINARY COLLEGE, GLASGOW;
April 8th, 1879.

DEAR SIR,—On the consideration of the President's motion, "That a candidate who fails in the practical examination, either for horses or cattle, be not further examined," owing to the near approach of the examination of our students it is impossible for me to be present. I trust that the President's motion may not be carried. I think that the passing or rejection of students may be safely left in the hands of the examiners, and as the student has paid a fee to cover the whole of the Examination, both practical and oral, he should be subjected to both tests. If a student is only defective in the practical and fully equipped in the theoretical and scientific, I do not think that such a student ought to be rejected. On the other hand, if the student is defective both in the practical and scientific, no sympathy should be shown, and the full extent of his defects made known to him.

(Signed) JAS. McCALL.

The PRESIDENT said that the motion of which he had given notice was a very small question indeed. The fact was, that if a candidate got "Bad" in any subject, the Board of Examiners always rejected him, however good he might be in others. He might get an "Insufficient," or two "Insufficients," but if he got a "Bad" he was actually rejected. The practical examinations took place in the morning, and the result of these was known before the Court of Examiners met, and it was too much to ask them to go on with the examination of a young man whose rejection they knew of beforehand. There might be some advantages to the candidates themselves in going up for further examination; but as it was the invariable rule to reject all candidates who got a "Bad," and as by four or five o'clock in the afternoon it was known who had got a "Bad" at the practical, it seemed to him that their going up was a waste of time of the examiners.

In answer to Mr. TAYLOR,

The PRESIDENT said that the rule was that any one "Bad" always rejected a student; any mark below the whole examination "Minimum" was the same as "Bad."

Mr. TAYLOR said that students going through the old curriculum received a certain amount of education. It was no doubt imprudent for them to come up for examination unless they were thoroughly educated, but if they paid the fee asked, it was only justice and equity that they should be allowed to be examined on the whole of the subjects.

Mr. FLEMING said he felt the force of Mr. Taylor's remarks. In the first place there was a Chairman of the Board of Examiners, and there was also the Board of Examiners, who would decide as to the merit of each candidate in the evening; and it was a serious question whether the examiners who examined on the practical subjects in the morning should have the power, without the sanction of other members of the Board, to reject a student. In the second place, the student paid a certain sum to meet the expenses of the whole examination, and to stop him at a portion of his examination and say that he must not come up for the remainder, raised a rather serious question, which ought to be duly considered. He maintained that although a student was bad in his practical examination, and the examination afterwards ended in rejection, nevertheless, as Mr. Taylor pointed out, it had a certain amount of educational influence on the student and did him good; it was a serious question, inasmuch as it would throw on the practical examiners a good

deal of onus, which was at present borne by the whole Court. He did not think it would be much benefit to the College, though it would save a little by diminishing the number of students who came up for examination in the evening. It was a question, however, whether the students might not claim the right to undergo the whole of the examination, although they knew they would ultimately be rejected. Unless the bye-laws were materially altered, and the students were given to understand that they would have no claim to come up for the full examination, he did not think the Council had a right to refuse them such examination.

Mr. GREAVES thought he saw the force of the President's argument, that by telling the student when he had failed in his practical examination he need not go any further, and that even if he was examined by the whole of the examiners the one "Bad" of the practical examination would cause him to be rejected in the end. It would cause a good deal of waste of time and waste of money. At the same time he could see the force of Mr. Fleming's remarks, that it would throw the onus on the practical examiners, an onus which would probably be more than any two or three examiners would like to take upon themselves. He thought it was right that something should be done to impress upon the teachers as well as the students the great importance of the latter obtaining a practical knowledge, without which they would be rejected. If nothing else resulted from the President's motion, it would excite the feeling that it was absolutely necessary that a practical knowledge should be obtained on the part of the student, to a greater extent than was the case at the present time. He thought that the President's motion, with some slight alterations, would, if carried, be of very great importance.

The PRESIDENT thought that the feelings of the members of Council seemed to be generally against his motion, and he would therefore withdraw it. He had himself no feeling in the matter.

The subject then was allowed to drop.

It was arranged that the candidates for the Fellowship Degree should be examined immediately after the termination of the July examinations.

Members of Council.

The following gentlemen were proposed as Members of Council for the ensuing year :—

The President	Proposed	Mr. Dray and also Mr. J. Roalfe Cox,
Mr. Dray	"	Prof. Simonds.
Mr. Coates	"	Mr. James C. Broad.
Mr. Dacre	"	Mr. William Whittle.
Mr. Geo. Carless	"	Mr. T. Joseph Cartwright.
Mr. Batt	"	Mr. Jas. Moon.
Mr. Broughton	"	Mr. J. W. Anderton.
Prof. Pritchard	"	Mr. T. W. Gowing.
Mr. Greaves	"	Mr. A. H. Santy.
Mr. Gowing	"	Mr. J. M. Axe.
Mr. M. Clark	"	Mr. G. Balls.
Mr. Oatway	"	Mr. W. G. Flanagan.
Mr. Batt	"	Mr. F. W. Ragg.
Mr. Fleming	"	Mr. A. J. Owles.
Mr. Morgan	"	Mr. W. Robertson.
Mr. Moon	"	Mr. Geo. Williams.
Mr. W. Clark	"	Mr. Thos. Talbott.

It was agreed to submit the form of advertisement calling the Annual Meeting to Mr. Loch, for the purpose of ascertaining his opinion as to whether it was legally drawn up.

The SECRETARY announced that Mr. Gregory had enclosed a cheque on account of the defunct West of England Veterinary Medical Association for the College Fund, and asking a receipt of indemnity from the Council, which was accordingly sent.

Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £120 15s. 3d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £330 os. 5d.

House Committee.

The Committee reported that in accordance with the decision arrived at at the last meeting of the Council, the Secretary reported to the Committee that a trustworthy man and his wife had been selected to take charge of and reside in the College premises, occupying the basement and upper rooms, and that £20 was to be allowed them by the Secretary, a suite of rooms being given up for the enlargement of the Museum. The Committee also recommended that the interior and exterior of the College be cleaned and re-painted, and that an estimate be submitted to the Committee for the same.

Mr. FLEMING pointed out the injury that was being done to the specimens in the Museum from the mould that was growing on them, owing to the dampness of the rooms in which they were at present located, and proposed that they should be removed upstairs, where the rooms were dry and well lighted, and that the arrangement of the specimens be left to the House Committee. He also moved that cases be purchased in which to put the specimens, and that they be such as could be utilised in the new College building.

Mr. TAYLOR seconded the motion, which was carried.

On the motion of the PRESIDENT, seconded by Mr. Dray, the Report of the Finance Committee and the Treasurer's statement were received and adopted.

Cheques were ordered to be drawn for the current expenses, and for the postage of voting papers.

Mr. DRAY proposed Mr. Thos. Moore and Mr. James Broad, Junr., as Auditors. Mr. TAYLOR proposed Mr. Woodger, Junr., if required.

Messrs. Collins, Fleming, and Dray were appointed a Committee to draw up the Annual Report.

Messrs. Dray, Moon, and G. Williams were appointed the members of the Dinner Committee.

Mr. COLLINS then detailed the interview he had had with Mr. Noel relative to the obtaining the gratuitous use of one of the public buildings for the purposes of the College; but he said he was assured that none was available. It only remained to obtain from Government a grant of money, and it would be necessary, for the furthering of this end, that a committee should be appointed to wait on the Duke of Richmond.

After some conversation it was ultimately arranged that a deputation should wait upon his Grace shortly after Easter.

The Council then adjourned.

CENTRAL VETERINARY MEDICAL SOCIETY.

SPECIAL MEETING, February 12th, 1879. Professor AXE in the chair.

The SECRETARY read the minutes of the last meeting, which were confirmed. He afterwards exhibited a specimen of induration of the mammary gland which had been brought by Mr. Shaw. He also called attention to the case of a rat which appeared to have suffered from Scrofula. Both kidneys were much enlarged, as was also the spleen, and the abdominal viscera presented a "grapy" condition. He thought the science of comparative pathology might be considerably enriched by the study of morbid changes as they occur in such animals as the rat.

Some time ago he removed from the liver of one of these creatures a circular entozoon, having at one spot about twenty little hooklets. It measured over an inch in length.

Mr. BROAD said he once found a similar entozoon in the liver of a mouse.

Professor AXE said, from a casual examination he had made of the diseased parts, the gross pathological characters would favour the view taken by the Secretary, that the morbid growth in the several organs was tubercular. A microscopic examination of the structure would enable him to speak more definitely on the point, and he proposed to examine it the first opportunity.

The SECRETARY said he had received a letter from Mr. FLEMING, expressing his regret at being unable to attend the meeting; and also a letter from Professor Walley to the same effect. Professor Walley also regretted that, in dealing with the question of "Garget," Mr. Smee had not recognised in a becoming manner the researches of veterinarians, and likewise that Mr. Power had not sought the assistance of veterinary surgeons who might have given him valuable aid in his sanitary researches at Kilburn.

Professor AXE then addressed the meeting on "Garget in relation to Diphtheria."

He said: It will be in the knowledge of this Society that at a recent meeting of the Pathological Society of London, a communication was read from Mr. Power by Dr. Buchanan on certain observed relations between Diphtheria and milk, and that Mr. Smee also read a paper on the same occasion upon Garget in reference to the cow. Those two papers have been brought to the front by our medical and sanitary journals, and they have been largely discussed by the daily press. The conclusions to which they point have the highest interest for us, in their sanitary as well as in their pathological connections: and the general importance of the questions involved commend them to our most serious consideration. I may *premise* my remarks by saying that, in the spring of last year, an epidemic of Diphtheria fell somewhat heavily on certain parts of the sanitary districts of Hampstead and Marylebone; and that, in consequence, the Local Government Board was communicated with, and Mr. W. H. Power, a gentleman of the highest eminence in sanitary science, was deputed to inquire into the circumstances relating to the outbreak. It would appear from the weekly returns of the Registrar general that Diphtheria prevailed to a greater or less extent throughout the metropolis both at the time, before, and after the special outbreak referred to. In pursuing his inquiry Mr. Power found that the highest incidence of the malady was reached in the parishes of Kilburn and St. John's Wood, within a circle of half a mile radius, having its centre in the Abbey Road. Moreover the outlying parts of this circle furnished an excess over the incidence of the disease throughout the metropolis generally. It was further observed that the more intense incidence of the affection was not only circumscribed in area, but that the special cause, whatever it might be, was operative during a very limited time. In dealing with the personal relations of those first attacked in each household it was found that in only a

few instances had there been any direct exposure to infection from persons having throat illness. The great prevalence of the disease therefore in the circumscribed area could not be accounted for on the grounds of personal intercourse, and the cause was consequently sought for elsewhere. The possible contamination of water was disposed of by the fact that not only the invaded houses but likewise a very large district in which Diphtheria did not prevail, or only in a very small degree, were supplied from the West Middlesex Company whose water is pronounced to be as good as any in London. In dealing with the questions of public sewers and private drains it soon became obvious that in the infected area there were present, in all their force, the precise conditions known to favour the dissemination of spreading diseases. Indeed, sanitary science could hardly point to a more flagrant example of the subversion of its principles than that which the special disease area presented.

On this point Mr. POWER remarks: Under conditions of existing public sewage and private drainage the special area cannot have failed to have been repeatedly if not continually exposed to sewer and drain nuisances, for the liability of the main sewers to strangulation at their outfall under exceptional rainfall (such as prevailed prior to the outbreak) must have frequently conduced to extensive backing up of sewage, and penning up of foul air within the ill-ventilated sewers, and hence to forcible expulsion of the pent up sewer air, by the way of unventilated house drains, and inefficiently trapped orifices into the dwellings of the district. To put it plainly, the outbreak was one of a well-defined and localized character, and corresponded in its extent to the area of defective drainage. Indeed *primâ facie* there was a pronounced relationship between the unsanitary conditions and the event both in reference to time and space. The connection of the outbreak to the supply of milk was next considered. It appears that, in consequence of representations made to Mr. Power by Dr. Morton, special attention was directed to two sources, from which milk was largely supplied to the infected district. One being a dairy farm at Muswell Hill, and the other source, sheds in the parish of Kilburn. Both establishments are in the hands of one proprietor, but only in regard to cows and cows' food was there any community of circumstance. "As regards employés, general administration, and milk science, they were wholly distinct the one from the other." An account from the households supplied from the sources referred to was furnished to Mr. Power, and a strict inquiry was set on foot for cases of throat illness, over the lines through which the milk was distributed, and a very large percentage of cases was found to have occurred in houses supplied by it; but it is not stated whether Mr. Power pursued the same minute system of inquiry in regard to the distribution of milk from other dairies, nor does it appear whether bread and other articles of food, which must have been largely exposed to sewer air, were considered in their relations to the infected households. That to the milk, and not to the sanitary defects of the locality the outbreak was due, Mr. Power's figures appear to prove most conclusively; but before they can be regarded as reliable, it must be known that Mr. Power's inquiry dealt with the milk of all retailers alike, that he did not make house to house visitation in regard to the Muswell Hill and Kilburn milk, and accept the medical officer's report alone on account of houses supplied from other sources. Cases "so mild that their nature was rather inferred from their relation to other cases than from their own symptoms" are not such as would reach the medical officers, but they have been taken account of by Mr. Power, and would no doubt swell the numbers, as against the Kilburn and Muswell Hill milk, to formidable proportions. As to the means whereby the milk became infected no definite conclusion seems to have been arrived at. The water in use at Muswell Hill, while possibly exposed to foul soakage, was in

general use by the family at the farm, who continued in good health throughout the epidemic, although using, besides, the suspected milk. The Kilburn water was derived from the West Middlesex Company, and for reasons before stated is acquitted of having any concern whatever with the outbreak. The sanitary conditions of the premises, the general conduct of the business, and the manipulation of the milk and dairy utensils, reveal nothing suggestive of means whereby specific infection could have been brought about. At no time has Diphtheria been known to exist in any member of the two households concerned, although both young and old have drunk largely of both milk and water; and, moreover, I am informed on the best authority that in no instance has Diphtheria existed in the households of the several retailers who dealt out the milk, although in some instances they comprise large families of young children who partook of it daily in considerable quantities. In regard to the cows, I have had several interviews with the veterinary surgeon under whose medical care they are placed in sickness, and he assures me that at no time during the first six months of the year was any one of them the subject of Garget, or any febrile or other disease whatever likely to contaminate milk. Indeed, throughout the whole period during which Diphtheria prevailed, the two herds were in the most salubrious condition. Whatever explanation, therefore, be sanctioned as to the way in which the epidemic originated, these facts cannot be disregarded so long as milk is held to be in question. "As to health of cows," says Mr. Power, "it is affirmed that at neither place has serious illness occurred, but this affirmation does not exclude occurrence of cold or other minor ailment among cows." From this it would seem that the entire responsibility is centred in that common condition we term "cold," or in some other undefined minor affection, which may or may not have existence.

It is hardly necessary for me to urge the utter absence of data by which any possible relationship can be shown to exist between Diphtheria and cold, nor need I dwell on the overwhelming evidence which we daily experience to the contrary, and with which all are familiar. I now pass on to notice some observations of Messrs. Power and Smee, contained in papers read before the Pathological Society of London. In reviewing the history of milk epidemics, Mr. Power says, "In many instances in which a relation has been traced between milk distribution and enteric fever, there is no doubt of the disease being due to the dissemination of milk contaminated by impure water or air. There are other examples where such introduction of water or air has been but obscurely made out, whilst there remains a third class, where the intervention of infected air or water has seemed unlikely, and where the readiest explanation of the outbreak would be afforded if milk, apart from air or water, could be regarded as the source of the disease." In other words, the latter instances could best be explained by regarding the cow not merely as an incubator of the germs of disease peculiar to her, but as a real factor or generator also of those which only take effect in the human subject, as in Typhoid, Scarlatina, and the like. In the particular outbreak of disease in question, this assumption has been carried to its highest and most dangerous attitude, for dangerous it must be to brand a great source of food supply with malignant properties on evidence which is not only wholly of a negative character, but which is also of the most remote description. To accept the view suggested by Mr. Power, adopted by Mr. Smee, and so hastily acted upon by the Pathological Society, necessitates in a very great measure the abandonment of the germ theory of disease, and the acceptance of the doctrine of spontaneous generation. But before such a sweeping innovation can be entertained, it must be clearly shown that the failures so repeatedly met with in tracing out the sources of contamination are not due to a deficiency or misinterpretation of facts and phenomena.

Moreover, it is most likely that had Messrs. Power and Smee been better acquainted with comparative pathology, or sought to be informed by those who have made cattle diseases their special study, both chemically and experimentally, they would not have troubled the Pathological Society with a hypothesis that admits of the clearest refutation.

Passing to the question of "Garget," I need not trouble you with any details as to the pathology of the disease as it presents itself to us in an ordinary way, as I am perfectly sure that all of you are fully acquainted with it, Mr. Smee's assertion to the contrary notwithstanding. As, however, reference has been made by that gentleman to a *specific* form of "Garget," it will be interesting to refer to a recent outbreak of this type of the malady, as illustrating the entire absence of etiological, and indeed pathological relations also, between it and human Diphtheria. The facts are these. In January last, "Garget" appeared in a herd of eighty cows, forming part of a large London dairy. As in others of its kind, stall cows were every now and again being removed, while fresh "in calvers" were at the same time being imported. During eight weeks no less than twenty of the herd became affected with this form of Mammitis, and several of them so acutely that it was considered advisable to destroy them. Neither age nor condition conferred immunity, and pregnant cows, as well as stall milkers, and also those recently calved, were alike attacked. Cows recently imported in a perfectly healthy condition became affected in from three to five days after their arrival in the shed, thus fixing the incubative period.

A strict inquiry was instituted as to the system of milking, feeding, and general management, as well as to the sanitary condition of the premises. The operation of milking was carefully watched, and strictly performed; every care was likewise exercised to guard against the ordinary known causes of "Garget," such as mechanical injury, exposure, gastric disturbance, etc., but without producing any abatement in the spread of the disease. The food was changed more or less completely, and the general management rendered as complete as could be wished for, but with no good result. The sanitary condition of the sheds was as good as could be desired, and everything relating to health seemed to be as complete as the resources of a London dairy will allow. The progress of the disease was singularly rapid, and generally rendered one or more of the glands useless as milk-forming organs, and in several instances completely disorganised the whole.

The initial symptoms of the disease were essentially systemic, and consisted in rigors more or less severe, a staring coat, general dulness, and an impaired appetite. The internal temperature was exalted from two to five degrees, and in some instances this was associated with a brief attack of Diarrhœa. The pulse was increased in frequency and in fulness, and the general condition of the body denoted a febrile state. The secretion of milk was at first simply diminished, without having undergone any perceptible alteration in its physical properties. Soon, however, the mammary gland became hot and tumid, and the milk watery and laden with caseous flocculi. In a short time the gland became enlarged, tense, and painful to the touch, and masses of caseine and purulent matter formed the bulk of what could be obtained from it. Purulent infiltration of the diseased part quickly followed, and abscesses, varying in size and number in different cases, were developed in the structure of the organ. In some instances, pyæmic symptoms supervened on the local change, and necessitated the animal being destroyed. The gland structure was primarily involved. I mention this because in an article recently published in THE VETERINARY JOURNAL, describing several outbreaks of a similar nature which appeared on the continent, it is remarked that the teats became first diseased, and that the malady extended from them in the direction of the ramifications of the lactiferous sinuses and

ducts. That this form of "Garget" is of a specific nature seems to me in the highest degree probable, but that it has no etiological relations with Diphtheria is abundantly attested by the fact that, although for some time the chief bulk of the milk of this dairy must have been contaminated with that from the diseased animals, the district over which it was distributed continued as free from Diphtheria as any other part of the metropolis. If, therefore, this be the specific form of "Garget" on which Mr. Smee has laid so much stress, and to which by implication he has referred such dangerous properties, it is satisfactory to know that we are able to place so important a matter beyond the pale of doubt. It may not be pathologically precise to say that like always begets like, either in an anatomical or clinical sense, where disease is transmitted from the lower animals to man, or from man to the lower animals, and this for reasons that will be found in the diversity of structure and function, food and habits, and mode of life; but there is belonging to all these interchangeable disorders, as they exist in man and beasts, common characters and features which bespeak their relationship. Mr. Power points out that already we know of several diseases in the cow capable of infecting the human subject, and he cites the relations of Vaccinia to human Small-pox, of bestial to human Tuberculosis, and Anthrax Fever in animals to that of man, etc., all of which carry with them, from one creature to the other, the typical features of the group to which they belong. If this be so, then is it not to bovine Diphtheria that we should look for any etiological relations that may exist between the cow and human Diphtheria. Considering, however, the utter disregard with which comparative pathology has been viewed in this kingdom, it is not too much to assume that bovine Diphtheria, like many other animal diseases, is not yet known to human pathologists. That the milk of cows affected with this disease is not capable of originating Diphtheria in man, is shown by the facts I am about to relate. In January last an entire herd of forty milch cows became more or less affected with this malady. Ten of them suffered very severely, one died, and one was destroyed when in a state of collapse. The symptoms exhibited by them varied somewhat, according to the intensity of the attack. The more severe cases were ushered in with rigors and Diarrhœa, food was refused, the animals became dull and dejected, and the internal temperature was increased, in some instances three, four, or five degrees. The pulse was quick, and the respiration somewhat hurried. This was followed by great prostration, cold extremities, and a harsh, croupy cough. As the disease progressed the cough became more and more painful, and the breathing embarrassed. Foamy saliva fell from the mouth, the throat became enlarged, the movements unsteady, and the body tympanitic. Dullness increased as the disease went on, and culminated in coma. In the worst cases death was brought about by asphyxia. Some of the animals only exhibited a slight cough, with bronchial catarrh, and some small degree of fever. Such cases, which were in the majority, recovered in from three to five days. I regret to say that I had not an opportunity of making a *post-mortem* examination, but the gentleman in attendance kindly forwarded to me the larynx of the cow that was destroyed, which I have much pleasure in laying before you. When first removed, the false membrane, which is now seen to cover its mucous surface, was much thicker than it now appears, and more so in some parts than in others. When portions of it were removed by the forceps, which was readily done, the mucous layer beneath was found to be swollen, as was also the submucous tissue, and there was besides a general hyperæmic condition of the whole. The specimen before you is by no means an isolated one of the kind. Several such, occurring in calves, have been forwarded to me at different times from various parts of the country. Here is one of them exhibiting extensive Diphtheritic deposit on the mucous layer, as well as

inflammatory infiltration and necrosis of it, and the submucous tissue. I am not aware that attention has hitherto been called to Diphtheria, as occuring in bovine animals, and as yet nothing has been done to work out its pathological details. The great interest which attaches to this outbreak, as bearing on the question at issue, is centred in the fact that the milk from the majority of these cows was drunk by a large number of persons, and in no single instance has it produced the slightest ill effects. Whether the milk referred to by Mr. Power was or was not the medium by which the contagion was conveyed over the infected area is purely a sanitary question, and cannot be dealt with here; but that the disorder known as "Garget," either in its common or specific form, has any relations whatever with Diphtheria cannot, I think, be sustained in the face of the evidence I have laid before you. I cannot close these remarks without expressing my deep regret that members of the sister profession should pay so little regard to the teachings of comparative pathology, and it is still more to be lamented that those who aspire to authority, and walk in the ways of science, should deign to desparage the labours of a kindred profession. To say that "Garget" is "not much known to veterinary surgeons" is to proclaim an unpardonable want of knowledge of veterinary literature, and a culpable indifference to real authority. It is manifest that without the aid of comparative pathology, state medicine must continue to be a comparative failure, and the science of medicine, as a whole, weak and defective. The case before us has much interest for the veterinary profession, and points in a forcible manner to the necessity for watchfulness on our part over all matters relating to sanitary science, in which animal diseases are concerned.

Mr. MOORE said they were very much indebted to Professor Axe for his defence of the profession in regard to the unjust accusation which had been made against it. It was clear that those who accused veterinary surgeons of knowing nothing about "Garget" had not a great knowledge of veterinary literature. As the liver used to be the seat to which all diseases used to be referred, so milk at the present time is looked upon as the source of all infectious diseases. Why this should be so he could not understand. He had known calves to suck cows affected with "Garget" without suffering in any way from the effects of the milk. In Mammitis, arising from contagious ecxema, it was otherwise. He had seen cattle suffering from throat disease, the real nature of which he was not precisely acquainted with, as an opportunity had not occurred for examining them after death. He had likewise seen horses affected in the same way, when they were unable to swallow anything for several days, but they usually yielded to treatment.

Mr. FRASER said he must give himself the pleasure of saying one word. His experience of the medical profession was, that if they asked any information from their veterinary brethren they were apt to do it in a patronising way, and to receive the statements with something like qualification, as though they thought the profession incompetent to form a judgment on the facts they observed, or of building up any theory. When the subject was brought before them, he confessed the impression made on his mind was one of surprise. He could not understand how any medical man acquainted with the rudiments of medical science could suppose there was any connection between Mammitis and Diphtheria. He spoke from his experience, and he had seen a considerable amount of Mammitis. And yet he could not remember it to have presented itself in a form that could be called epizöotic. In his neighbourhood there was an outbreak of Diphtheria, and in some stables where he attended Mammitis existed. When he returned home he should endeavour with considerable interest to trace any connection between the two. There was only one medical man in the town in which he resided with whom he could freely converse on the matter; but, for the most part,

medical men gave the cold shoulder to their veterinary brethren. He could honestly say that he had that night received a great deal of information from the President; and he was quite sure that the papers read in that room must be very instructive to those who had the opportunity of hearing them.

Mr. MOORE was surprised to know that bad sewerage prevailed in St. John's Wood.

Mr. SHAW said they were very highly indebted to their President for his able address. He would propose that the meeting be adjourned, so that the discussion might be fully entered upon on another occasion. He had seen several cases of Garget; but in those he had seen there had been very little milk at all, and the cow-keepers mostly milked what dregs there were on to the ground, and put a calf on to the animal on purpose to draw it all away.

Mr. HANCOCK seconded Mr. Shaw's proposition for an adjournment, thinking it probable that some Fellows, not in attendance, would like to say something upon the subject.

Professor AXE said he had no desire to prolong the question, but he thought there was a large quantity of useful information to be acquired by so doing, some points then occurred to his mind, and if the adjournment were decided on, he would take the opportunity of introducing to the society sections of diseased and healthy glands.

On the vote being taken, it was decided to adjourn the subject to the next meeting.

Mr. JOHN GERRARD, of Romford, Essex, was proposed as a Fellow.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting and Dinner of this Association was held at the Blackfriars Hotel, Manchester, on the 26th of February, 1879, W. Dacre, Esq., President, in the chair, the following gentlemen being present:—Professor Williams, New Veterinary College, Edinburgh; T. A. Dollar, London; Messrs. Greaves, P. Taylor, T. Taylor, J. Lawson, W. A. Taylor, T. Hopkin, E. Faulkner, A. Lawson, J. B. Wolstenholme, and J. O. Martin, of Manchester; J. Welsby, Liverpool; J. B. Taylor, Ashton; H. Furgusson, Warrington; E. Woolner, and C. D. Ashworth, Heywood; W. Whittle, Mosley; M. E. Naylor, Wakefield; W. G. Schofield, Pontefract; H. J. Cartwright, Wolverhampton; A. Darwell, Northwich; J. Bunnell, Oldham; P. Walker, and Parlane Walker, Bradford; and S. Locke, the Secretary.

Letters of excuse were received from Professors Pritchard, McCall, and Walley, Messrs. G. Fleming, D. Hutcheon, M. J. Harpley, S. F. Falding, W. Broughton, J. Cuthbert, J. Gerrard, J. W. Axe, R. H. Ringe, 5th Dragoon Guards, and many others.

The PRESIDENT, in delivering his inaugural address, said:—Gentlemen,—You are doubtless aware that the delivery of inaugural addresses is becoming somewhat unfashionable, but I am sure you would not like the meeting of this day to pass over without some formal recognition. At the same time, I have no intention of detaining you long from the social pleasures that await you above stairs, and I propose (digressing as little as possible) to confine my remarks to the past work and future prospects of Veterinary Medical Societies at large, and the Lancashire Association in particular.

As you already know, gentlemen, we have just passed through one of the most eventful periods in the history of our profession, and at last get a glimpse of the silver lining of the dark cloud that has so long cast a shadow over the path of professional progress. Imperfectly acquainted, as I am, with the political aspects of the profession, I cannot speak with any great confidence or authority on this subject, and I beg you will correct me if an

error should creep into the few remarks I have to make. It will be in the memory of many members that, up to the last two years, the political influence of Veterinary Medical Societies was *nil*; and, as a matter of fact, the provincial members of the profession were unrepresented in our parliament. Few changes took place in the Council Chamber, and the only new blood infused into this semi-fossilized body was the access of a Metropolitan practitioner, on whose lips the word "provincial" was a sneer, or the election of an Army Veterinary Surgeon, who, from his position in life, was not acquainted with the requirements of the general practitioner, nor capable of representing him at the Council Board. Professor Huxley has said, "That the heads of colleges have not the reputation of being the most mobile of persons"; but at last the authorities in London gave us what in justice we ought to have had sooner, viz., the vote by proxy; and to show you how eagerly the members of Veterinary Societies grasp with a firm hand any means of advancement that offers, I have but to refer to the recorded triumph of the first election committees.

I cannot dismiss subjects of a political character without at least alluding to an accomplished fact, having a most important bearing on the future welfare of the profession, viz., the discontinuance of the examination of the Highland Society, and the amalgamation of the London and Scotch Schools. It is but a year ago that this consummation so devoutly to be wished for seemed as far off as ever, and the negotiations towards the removal of this stumbling-block in the path of progress seemed to be brought to a standstill. At this unfortunate juncture of affairs there stepped into the widening breach, a Lancashire man—a member of this Society, who by his diplomatic talent, his knowledge of the position, and the very able and conclusive arguments he brought to bear upon the subject, surmounted all difficulties, and finally was instrumental in bridging over what at one time seemed an impassable gulf. The work of this gentleman (to whom we certainly owe our most sincere thanks) was not accomplished without drawing down upon him the sneers of those who, entirely mistaking the motive by which he was actuated, accused him of having, by his conduct in the past been an obstruction to the very measure that, without his influence, might not yet have been brought to so happy a termination. Having then advanced so far, let us hope that the next important step may be towards the introduction of a penal clause into our Charter—and let that clause be so framed that it may be subject to none of those evasions of the law by which such clauses are so often rendered inoperative. The formal appointment by the local authorities of Veterinary Inspectors of districts is a tardy step towards the recognition of the public utility of the profession, and may lead to the organization of a Veterinary Sanitary Service as complete as that so long and ably advocated by our friend Mr. George Fleming. And now, gentlemen, let me turn to topics more congenial to my mind—the social and scientific work of Veterinary Medical Societies. I am sure that, with myself, you can look back with unmingled pleasure to the many friends you have made, and the many kindnesses you have received at the hands of those who, but for the social influence of these Associations, would have been strangers to you, or might even have been at enmity with you.

Although the meetings of these Societies should not be used for the ventilation of petty grievances or matters of a personal character, I am of opinion that they have been, and in the future will be, legitimately useful as arbitrators in cases of breaches of etiquette, etc. They should be regarded as a neutral ground, on which, without fear of partiality, explanations might be given and received; and I believe that upon investigation the missing link would be found joining, once more, the aggrieved members in the bonds of friendship and goodwill.

And now, gentlemen, in conclusion, let me say a few words as to the real functions of Veterinary Medical Societies. It was formerly the fashion in this, and indeed in other Societies, for the subject of the discussion to be brought forward in the shape of a long essay, rarely containing what I might call new knowledge, and seldom followed by an interesting or useful discussion. But we must remember that the production of new knowledge is an absorbing and difficult task, and beyond the power of the man distracted by the harassing demands of a private practice. But it is a comparatively easy matter for the ordinary practitioner to note any peculiar symptom or chain of symptoms, any pathological condition or *post-mortem* appearances, or the therapeutical action of any drug he may have been using; and it is the result of such observations, condensed into the form of a short practical paper, from which we have always elicited the most lively, useful, and intellectual discussions.

It must not be supposed from what I have said that I deprecate entirely the reading of papers of a more important character, and especially when they are written in the style of those recently read by Mr. Greaves and Mr. Gerrard, and Professors Williams, Walley, and Pritchard. And now while on this subject, I don't think it will be a healthy thing for this Society or any parallel one to rely upon extraneous aid too frequently; our feeling of self-respect should teach us that we have abundance of local talent to carry on the scientific business of the Society; and I here invite you one and all to support the officers you have elected, and make their task an easy one, by throwing aside all apathy and diffidence, and coming forward when required to contribute to the success of our quarterly meetings and the usefulness of the Society. And now, gentlemen, in conclusion, let me return my sincere thanks for the honour you have conferred upon me, and let me assure you that, as far as my small ability enables me, I shall show my appreciation of your confidence, and with your assistance uphold the dignity, usefulness, and wellbeing of this association.

Mr. T. TAYLOR proposed for membership Mr. T. A. Dollar, of London; seconded by Mr. P. TAYLOR, and carried unanimously.

Mr. T. GREAVES proposed Mr. F. Dunn, of London; seconded by Mr. T. HOPKINS, and carried unanimously.

Mr. S. LOCKE nominated for membership Mr. Henry Thompson, V.S. Aspatria, Carlisle; Mr. E. FAULKNER nominated Mr. J. O. Martin, V.S. Manchester; Mr. A. LAWSON nominated Mr. J. B. Wolstenholme V.S. Manchester. Mr. T. TAYLOR proposed Mr. F. H. Ridler, The Mall, Notting Hill, London.

Mr. PETER TAYLOR proposed that W. Whittle Esq., of Worsley, be nominated to represent this association in the Council of the Royal College of Veterinary Surgeons; seconded by Mr. T. GREAVES, and carried unanimously. Messrs. W. A Taylor, E. Faulkner A. Lawson, and T. Hopkin were duly elected an Electioneering Committee to forward the return of the above candidates.

The CHAIRMAN then intimated, before adjourning to dinner, that he would, with Professor Williams' permission, ask him to give his opinion as to the disease that the American cattle were suffering from, and said to be Pleuro-pneumonia. He understood that Professor Williams had had the opportunity of examining and making *post-mortem* examinations of some of the diseased cattle which arrived in Liverpool from America, per the "Ontario."

Professor WILLIAMS (who was received with applause) said he had seen over a hundred of the cattle slaughtered, and examined nearly all the diseased ones. In a few there were lung consolidations and pleural exudations, and, taking these lungs by themselves, one would, he thought, be justified in concluding the disease had been Pleuro-pneumonia. Even in these lungs, how-

ever, there were certain differences from what he was in the habit of seeing in the lungs of cattle killed for Pleuro-pneumonia in this country. The signs of inflammation were too acute, and a very acute and red pleural inflammation extended far beyond the lung consolidation.

In other cases, it was found that there were abscesses in the lungs; in others, cavities containing the *débris* of broken-down lung tissue and blood clots; appearances almost identical with what we had seen in the lungs of foreign horses after a rough passage even from Hamburg to Leith; and in others there was no lung consolidation, but pure and very acute pleurisy; and in some—in its first stage—mere redness without exudation.

Then the cough of the living animal differed from that of Pleuro-pneumonia Contagiosa—being much more painful and pleural. The cattle had undoubtedly been subjected to some severe cause or causes of chest disease, and taking the whole circumstances and *post-mortem* appearances into consideration, he would hesitate very much before giving an opinion that the disease was identical with Contagious Pleuro-pneumonia. At present he was much rather inclined to think that the disease resembled what he had often witnessed, viz., sporadic Pleuro-pneumonia, arising from exposure, or even from truamatic causes, such as penetration of the lung by a foreign body. He had also frequently seen Pleuro-pneumonia with well-marked pleural adhesions after an accidental introduction of food or medicine into the trachea.

The members and guests afterwards sat down to an excellent dinner, at which all the patriotic and other usual toasts were ably proposed and responded to, and a very enjoyable evening was spent.

SAM. LOCKE, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Medical Institute, Hope Street, February 14th, 1879, Joseph H. Welsby, Esq., President, in the chair.

There were present, Messrs. Morgan, Reynolds, Elam, Moore, J., W., and T. Leather, Lloyd, Simpson, Stevenson, Townson, Cane, Kenny, and Wilson, Liverpool; Professor Pritchard, Royal Veterinary College, London; Messrs. Talbot and Rowe, jun., London; T. Greaves, P. Taylor, T. Taylor, W. A. Taylor, T. Hopkins, S. Locke, E. Faulkner, and M. J. Roberts, Manchester, Wm. Whittle, Warsley; W. Woods, Wigan; H. Ferguson, Warrington; W. G. Schofield, Pontefract; D. Somerby and James Freeman, Hull; J. S. Menzies, W. H. Roughsedge, and W. Dixon, St. Helen's; P. E. Rothwell, Woolton; J. Storrar, Chester; W. Dacre, Altrincham; J. S. Carter, Bradford; Darwell, jun., Northwich; several friends and the Secretary.

Letters of apology for non-attendance were received from Professor Axe, Messrs. A. B. Proctor, W. Lewis, A. H. Santy, N. Barron, J. and H. Lawson, H. J. Cartwright, H. Barnes, W. A. Cartwright.

The minutes of the previous meeting were read and confirmed.

The PRESIDENT then delivered his inaugural address. He commenced by thanking the members of the Association for the honour they had conferred upon him in electing him their president for the year, and trusted that no shortcomings of his would mar the usefulness of the Association. He said: There are so many introductory addresses now at our Colleges and Veterinary Societies, that if I were inclined to be lengthy in my remarks to you this evening I should have some difficulty in finding ground that has not already been fairly trodden. And besides which, I feel sure that you will agree with me, considering that we have here our esteemed friend, Professor Pritchard,

that our time will be occupied with far more pleasure and profit in listening to his lecture. I consider that the two most desirable objects of these Associations are—the social elevation of its members and the advancement of knowledge.

It is daily becoming an acknowledged fact that our profession is of very great public utility and importance, not only because our pleasures often depend upon the maintenance of the health of the horse, but without him man could not have reached the present state of civilization, nor have been able to overcome the numerous obstacles to comfort and happiness; also, and chiefly, because the health and sustenance of ourselves are intimately associated with the prevention among, as well as devising and carrying out hygienic regulations in relation to the flocks and herds upon which we depend for our daily food.

Many changes have taken place in our profession during the past year; the most important, to my mind, is the union that I suppose is about concluded between the holders of the Highland Society's certificate and the Royal College of Veterinary Surgeons.

This, I think, will be the means of doing away with feelings on both sides that have been antagonistic to each other for a number of years, and wherever such exists progress is sure to be impeded. We shall now be all one with the Royal College of Veterinary Surgeons, which is the only chartered institution in Great Britain and Ireland that has the authority to grant diplomas to students attending recognised schools, and which is not strictly an English Institute but a national one. Therefore, let us hope that with our united efforts the science and art of veterinary medicine may advance and flourish, and that we may be able to obtain powers to protect our interests by preventing unqualified persons from assuming the title of Veterinary Surgeon.

In alluding to the Contagious Diseases (Animals) Act which has just come into operation, the veterinary profession has received much more recognition than in the Act of 1869, and with just claim to it. In the framing of the Act our profession was consulted far more than in the previous one, showing clearly that our usefulness is becoming more appreciated, more appointments have been made, but it is much to be regretted that those appointments under the different local authorities should not have been distinctly defined by the Act, that gentlemen only possessing the diploma of the Royal College of Veterinary Surgeons, or the certificate of the Highland Society, should have been eligible, whereas, in some instances, unqualified practitioners are appointed.

This being our first meeting of the year, I cannot allow the opportunity to pass without alluding to the deaths that have occurred during the past year, numbering nearly forty, some of whom were intimately associated with all of us.

It has pleased Him in whose hands are the issues of life and death to remove from amongst us two of our own members—the late Mr. Wm. Elam, and the late Mr. Gilbert Heyes; let us share the consolation that our departed brethren have been exalted to a higher degree than they could have attained to in this sublunary sphere, and to quote the words of a certain author, "that having thrown themselves upon the mercy of their Creator and Judge—in full reliance on His gracious promises—they have been enabled to pass through the ark of redemption to the presence of Him who is the great "I am," the alpha and omega, the first and the last.

Before sitting down, permit me to say one word. Let us hope that the good work which we have met here for to-night may be continued, and that each meeting may prove more pleasurable and profitable than its predecessor. And I venture a word of entreaty, which is this: that it rests with you

to make it so, by your regular attendance and zealously assisting us in advancing its welfare in every way possible, remembering the motto inscribed on the seal of our body corporate, "*Vis unita fortior.*"

The SECRETARY read the report of the Committee of the Fleming Testimonial Fund. Twenty-six subscriptions had been collected by the Committee, amounting to £24 17s. 6d., which had been forwarded to the Secretary of the Central Committee in London, from whom an acknowledgment had been received.

It was unanimously resolved to nominate Mr. Wm. Robertson, F.R.C.V.S., Kelso, as a candidate for a seat at the Council of the R.C.V.S. at the next election.

Professor PRITCHARD then delivered a lecture on the "Pathology of Curb, its Causes and Treatment." He apologized to the members for not having written a paper on the subject, the reason being that during the short period that intervened between giving his consent to their President and the date of their meeting, his time had been fully occupied.

In reference to the subject itself, he said that they would naturally wonder why he had selected for their consideration such a well-known, every-day disease as Curb, one with which they were all so familiar, and upon which nothing very new could be expected, even from a professor.

He, however, expressed a hope that before he had finished his remarks upon the subject he would be able in some measure to jnstify his selection of such an apparently simple pathological condition as Curb was supposed to be.

1st. The position of Curb. All know well that it is situated on the postero-inferior part of the hock.

2nd. The pathology of Curb. Some structure affected with sprain; the question being, What structure is sprained?

Some say that it is the calcaneo-cuboid ligament; others the tendon of the flexor pedis perforatus; others the annular ligament at the back of the hock; and others the synovial sheath of the tendons of the perforans and perforatus. The differences of opinion recorded in early veterinary works as to the structure affected are just as great as we find expressed in more modern veterinary works upon the subject.

Now, I hope to be able, in the first place, to show you that there are no satisfactory reasons for accepting some of these theories, and in the second place I will endeavour to point out the true site of the disease.

But in order to render my description as clear as possible, I will briefly describe the structures situated at the postero-inferior part of the hock.

There are the tendons of the perforans and perforatus, which at this point pass down in close promixity to each other, there is the strong fibrous ligament at the posterior part of these structures—the so-called annular ligament, and the strong band of ligament extending from the apex of the os calcis to the cuboid and external metatarsal bone, the calcaneo-cuboid ligament.

Is Curb sprain of the calcaneo-cuboid ligament? I answer, No. This is one of the strongest ligaments of the body, its functions being to assist in holding the calcis in its proper relative position to the other bones of the hock, and to deal with the strain put upon the calcis which is considerable at times on account of that bone affording a point of leverage.

Had this important structure become sprained—partially lacerated—recovery would seldom or never take place. But in addition to the calcaneo-cuboid, we find strong interosseous ligaments which assist in retaining the os calcis in its position; and I opine that any force that would bring to bear such a strain upon this part as to lacerate the calcaneo-cuboid ligament, would also so sprain the interosseous ligaments as to set up an amount of

inflammatory action that would give rise to articular disease, and that would tend to make almost every case an incurable one.

Then there is the position of the enlargement exactly opposite the lower extremity of the calcaneo-cuboid ligament. Now, why should it always occur here, if it is the ligament that is affected? The ligament is as strong here as at any other part, and the strain upon it is no greater.

Then, again, if this ligament be the site of the disease, the enlargement would always be nearer the outer side of the hock than the inner, and my experience is that the enlargement, if anything, favours the inner side.

But why should this ligament be supposed to be the site of the disease at all? for in no *post-mortem* examination of Curb that I have made, have I ever found it in the slightest degree involved in the disease, which certainly would be so if diseased action had ever taken place in it; for in sprains of similar structures such as the superior sesamoideal ligament, we find an infiltration of lymph into its structure, with considerable external deposit, which never entirely disappears. Why should not the same result follow sprains of the calcaneo-cuboid ligament, if it is really the structure affected in Curb?

Professor Pritchard here showed the members several fresh prepared specimens of Curb, which, while pointing out the site of the disease, clearly showed that the calcaneo-cuboid ligament was in no degree involved in the diseased action.

As to the theory that the annular ligament is the site of the disease: Annular ligaments seldom suffer from inflammation, unless caused by external injury, as in the knee or fetlock joint, or from an extension of the diseased action set up in other structures of the joint, very rarely from absolute sprain. Then why should it occur in the hock joint? There is plenty of room for the tendons to play, and it must be borne in mind that, besides these tendons, passing down in company with them there are the nerves going to the lower portion of the leg. If the annular ligament was liable to partial laceration from pressure put upon it by these tendons, what would become of such important structures as these?

But as in the case of the calcaneo-cuboid ligament, there is no evidence, *post mortem*, that diseased action has ever existed in the annular ligament in cases of simple Curb.

Then as to the theory that Curb is sprain of the tendon of the "flexor pedis perforatus," I may content myself with simply stating that, like the two theories above noticed, there is no evidence whatsoever on examination, *post mortem*, that this tendon is involved in the diseased action.

We may have sprain of this tendon, and also the tendon of the perforans where the tendo-subtarsal ligament joins it; but in no case of simple Curb have I ever seen the tendon diseased.

The Professor then referred to Percivall's theory of Curb, and also to that propounded by one of the old writers on the veterinary art, which, he said, came the nearest to his own, viz.: A sprained and inflamed condition of the synovial sheath placed between the perforatus tendon and the posterior annular ligament of the hock.

The Professor said, if we examine these synovial sheaths carefully, we find one between the perforatus and perforans tendons—one anterior to the perforans tendon, and one between the annular ligament and the posterior surface of the perforatus tendon.

My own opinion, said Professor Pritchard, is that Curb is sprain of that synovial membrane situated between the annular ligament and the perforatus tendon.

The inflammation and deposition may extend to the sheath between the two tendons, but the deposition first takes place in the former position. I

have examined them twenty-four hours after their formation, and have found the deposition in that particular position.

But you may ask, How does the synovial membrane become sprained? The tendons have free movement, and even when the limb is flexed with the greatest rapidity and to the utmost extent, both tendons work together, yet it must be put upon the stretch somehow before it can be torn.

The explanation is this: the synovial membrane is attached to the white fibrous tissue at the posterior part of the hock, and consequently allows of a certain amount of movement only, and when that is exceeded, sprain to a greater or less extent must occur.

The Professor then briefly enumerated the causes of Curb; the principal and immediate cause being extraordinary flexion of the hock—young animals being most liable to it.

The conformations of hock most disposed to Curb were those with a very short and straight os calcis, and the reverse. With regard to Curby hocks, he said this shape was due to an unusual development of the head of the external small metatarsal bone, sometimes mistaken for Curb, but easily distinguished from it by passing the finger down the centre of the back of the hock, to the inner side of the calcaneo-cuboid ligament, when no elevation will be felt, and the enlargement in such hocks does not appear when the hock is viewed from the inner side.

Treatment.—Reduce the inflammatory action by rest, and the application of tepid water intermittently; so as to allow of evaporation. This he preferred to the constant application of either hot water or bandages to the part. The after treatment to consist of blistering or firing, or both.

Mr. REYNOLDS said that their thanks were due to Professor Pritchard for his very clear and, to his mind, very satisfactory exposition of the pathology of Curb. He considered that it was very much wanted.

In reference to treatment, the course recommended by Professor Pritchard was perhaps the most scientific, but it was often found impossible to carry it out in ordinary practice. For instance, he remembered a case which occurred to himself soon after he left college. A country parson rode into their infirmary yard from the hunting-field one day in November, and asked him to examine and prescribe for his mare, which had sprained her hock. He recommended antiphlogistic remedies as a preparation for other treatment, when he was immediately met with the rejoinder, "Young man, you know nothing at all about your business. I want my mare to hunt next week." I never forget that, said Mr. Reynolds, and as a matter of practical experience, I have found that the application of a severe blister at once, continuing the animal at work, answers very well in the treatment of Curb. He preferred the Biniodide of Mercury ointment as a blister; and in reply to a question, said that he would continue to work the animal even if he was lame.

Mr. PETER TAYLOR expressed his warmest thanks to Professor Pritchard for his very valuable contribution towards the solution of the true pathology of Curb; but, nevertheless, he was inclined to differ from the Professor's view—that it was the synovial sheaths that were affected in this disease; for he said in inflammation of joints and all synovial structures, we find a greater degree of lameness than we ordinarily find associated with Curb; and, on the other hand, the lameness in Curb does not correspond to the size of the swelling; which led him to believe, nothwithstanding Professor Pritchard's very logical reasoning, that the synovial sheaths of the tendons were not the site of the disease, but that it was the calcaneo-cuboid ligament that was affected.

In reference to treatment, Mr. Taylor said that veterinary surgeons were asked by their client to cure his horse, and quickly; and the veterinary

surgeon who could the most readily comply with that request, was the one who would be the most highly appreciated. As to the formation of hock most disposed to Curb, he (Mr. Taylor) differed from Professor Pritchard; in his experience, a short os calcis rarely became affected with Curb, and even sickle-shaped hocks were often found to stand severe work very well, if carefully seasoned. As to whether a horse having a Curb was sound or unsound, he considered that if the inflammatory action had subsided, and the horse was going sound, he was practically a sound horse. He said he had a client who, at one time, bought all the suitable horses which he could find with Curbs; this gentleman's treatment was a strong application of ammonia, and constant work.

Mr. STORRAR said that he had a four year old colt at one time, which sprung a Curb while his son was riding him. This case somewhat confirms Professor Pritchard's view of the pathology of this disease; for there was a bursal enlargement on each side of the tendon of the perforatus. By rest it passed away in a few days, but returned on his being ridden again; he was then put to harness, and did not go lame after. He was of opinion, however, that in those cases of Curb where the form of the hock was altered the calcaneo-cuboid ligament was affected, and a great many such cases showed spavin as well.

Mr. DACRE said he had listened with very great pleasure to Professor Pritchard's lecture; it bore upon itself the stamp of original research. He, however, could not understand how synovial membranes could become sprained at all; they were loose, not attached at both extremities like a ligament, and he could not understand how an enlargement should be left when such a structure as a synovial membrane only was inflamed. Again, Curb has shown itself immediately after the animal has been pulled up. He was, therefore, still inclined to put the question, What is the true site of Curb? As to the question of soundness, he would consider the animal sound if he was going sound.

Mr. GREAVES said that he had listened with very great pleasure to Professor Pritchard's lecture, but he would have been even more gratified had the Professor been able to tell them how it could be effectually cured. The most useful knowledge to them was, how to reduce the swelling. Mr. Greaves then referred to the various modes of treatment, antiphlogistic, active blistering in the early stages, and firing, but he said neither of these methods were completely successful in effecting the removal of the swelling. The best application for that purpose which he had tried was a solution of the Oxymuriate of Mercury in Spirit of Wine. He was of opinion that Curb was hereditary, and could be formed without any injury at all, as he had seen them on animals which had not been out of the stable for some time prior to their formations. With regard to the prevention of Curb, he said he had a client at one time who would not hunt a horse unless his hocks were fired. Did Professor Pritchard think that firing strengthened a healthy hock in that respect? Also, would he favour them with his opinion as to the action of Iodine in enlargements of this character?

Mr. FREEMAN said that it could not be the tendon nor the calcaneo-cuboid ligament that was sprained in Curb, for if either was injured, the animal could not go to work again in a day or two. Referring to the opinion expressed by Mr. Greaves that curb was hereditary and could become developed while the animal was standing in the stable without any previous injury, he (Mr. Freeman) was of opinion that Curbs produced under such circumstances were caused by the animal slipping when getting up, etc. As to any gentleman who would refuse to hunt a horse unless he was fired on the hocks, he would ask such a gentleman, did he consider himself wiser than his Maker?

Mr. HOPKINS, like the other speakers, expressed the pleasure with which

he had listened to Professor Pritchard's lecture. He said it indicated independent thought and original investigation; and after describing the various characters and appearances of Curb such as the large diffused swelling, and the well defined small firm band, he asked, have we two kinds of Curbs, and is it the annular ligament that is affected in some cases?

Mr. CARTER said he agreed with Professor Pritchard as to the pathology of Curb. In treatment, he did not find that firing reduced the swelling; his practice was to blister and keep at work.

Mr. WILSON said, his mode of treatment was to put on a high heeled shoe and rest until the lameness ceased; then apply a solution of the Bichloride of Mercury in Spirit of Wine, formula, Hydrarg. Bichlr. 1 dram, Spt. Vini 4 oz.; one dressing produced a very thick scurf.

Mr. T. SIMPSON said he agreed with Professor Pritchard that it was the synovial membrane that must be affected in Curb; it could not be a weight supporting structure that was injured, as the animal could not then resume work so soon after.

Mr. W. A. TAYLOR said that he agreed with Professor Pritchard that it could not be the calcaneo-cuboid ligament that was injured in Curb, from its very attachments, etc. At college, he said, we were taught that it was sprain of the annular ligament. I think we are not far off the true site of the disease now. As to the subject of soundness, you may have a recurrence of lameness from the same Curb.

Professor PRITCHARD, in reply, said in reference to the theory that the calcaneo-cuboid ligament was the site of the disease, in his opinion if there was one theory less likely than another to be the true one, it was this; if it really was the structure sprained in Curb, he was of opinion that the patient would run a poor chance of recovering. In reference to Mr. Dacre's difficulty in understanding how an enlargement should be left when such a structure as a synovial membrane *alone* was sprained, Professor Pritchard said that when a synovial membrane is placed in the position of a sheath for a tendon or between a tendon and a ligament, it will allow of a certain amount of movement and no more; if this be exceeded laceration takes place, inflammation follows, and a quantity of lymph is thrown out which subsequently becomes organized. He very much doubted whether many of the cases of so-called sprain of the back tendons of the fore and hind legs are anything more than laceration of the synovial sheaths in connection with these tendons.

In regard to the reduction of the swelling by remedial measures, the Professor said there was a quantity of serum and fibrin effused in Curb, and he was of opinion that it was seldom completely absorbed; but he considered the application of the Biniodide of Mercury ointment preferable to Cantharides for this purpose, because, when not too strong, you can continue its application for five or six days in succession, without any risk of subsequent blemish; this produces a very thick scurf, which remains on a long time, and exerts a pressure which has a very beneficial effect. He did not believe that Curb was hereditary, but always resulted from an injury; nor did he consider that there were two kinds of Curb, but only different degrees, depending upon the extent of the injury originally inflicted. In regard to the idea that firing was beneficial as a preventive of Curb, he did not believe that firing strengthened a healthy hock at all, and it was an act of cruelty to practice it for that purpose.

The PRESIDENT then proposed that a letter of condolence be sent from the association to Mrs. Heyes, expressing the sympathy which the members feel for her in the sad bereavement which she has sustained in the death of her husband. This was seconded by the SECRETARY and carried unanimously.

The PRESIDENT then proposed a vote of thanks to Professor Pritchard for his kindness in coming down among them—especially on such short notice

as he was able to give him on the present occasion—and treating them to the interesting and instructive lecture they had just listened to. This was seconded by Mr. GREAVES and carried by acclamation.

Professor PRITCHARD, in reply, said that he was very much gratified by the reception which they had given him ; he was aware that there had existed among the northern brethren a sort of reproachful feeling towards the Professors of the London College, because they had not come more frequently among them ; but he begged to assure them that their absence was not due to want of will but to lack of opportunity. As an instance, he might tell them that he had to travel 140 miles by rail yesterday ; that day he had arrived, and must return that night, as he had to start from London to Ipswich next morning at five o'clock. He thanked them for the kind appreciation which they had evinced in the subject introduced for their consideration, and he could assure them that to him it was ample reward for any little inconvenience he might have experienced, to be able to contribute something suggestive of thought to an association like this, and to be privileged to meet with its members.

A vote of thanks to the President terminated a very instructive and harmonious meeting.

D. HUTCHEON, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

(Continuation of Mr. Greaves' Essay on "Germs." See page 298 of last month's Journal.)

Bacteria are germs that have become organisms, and are of different kinds ; some of them are so minute that they are beyond the reach of all sense, requiring the magnifying power of a thousand diameters ; some have motion, some of them have no motion ; some are oval in form, some rod shaped, some exquisitely delicate filamentous fungi, some possess the contagious virus, others do not. Spores are considered the foliage or bloom of the straight rod-like bacteria ; these cannot be originated by the normal tissues or juices, they must have been derived from germs in the external air, they are found to exist in many parts of the human body and in animals, never in the blood of healthy persons in life. These germinal matters in the air attach themselves to particles of dust floating in it—particles scarcely visible in ordinary light appear as motes in the sunbeam, or in the beam of an electric lamp ; it is by the agency of these particles that they are conveyed from place to place. The numerous experiments conducted with vast care and exactness by Baron Liebig, Professor Tyndall, Professor Lister, Professor Roscoe, Mr. Pasteur, Dr. Burdon Sanderson, Dr. W. Roberts of Manchester, and other men, the most advanced thinkers of the present day, have proved (as I think) most conclusively that the "Germ Theory" is a reality. They show most satisfactorily that if an infusion or wet dead animal or vegetable matter at a certain temperature be exposed to ordinary atmosphere for a few hours, it will become peopled with numerous low organisms. These are bacteria ; they are never produced spontaneously, but originate invariably from germs from the surrounding media. They appear in the form of spiral rods, which elongate rapidly ; they are then observed to break in segments, each segment becomes a living organism ; there are also numerous offshoots, these are called spores, they drop off and are each of them organisms ; they have each the power of self-propagation and are endowed with wonderful activity. But if you take the same infusion or wet dead animal or vegetable matter at the same temperature and expose it to air carefully filtered, the aerial dust

and germs being effectually excluded, and the experiment conducted properly, you may allow such air to be in contact with it for days, weeks, and months, but no such phenomena will take place: showing that the germ in the air has been kept back by the filter, and that no other element exists that has the effect of producing organisms. This totally disproves spontaneous generation. But their experiments prove more than this; they prove most conclusively that no ferment, decomposition, or putrefaction can take place without the presence of these low organisms—"bacteria,"; yea, these experiments go still further, they show that there exists a strong analogy, if not positive identity, between fermentation and several fevers; it is shown that they both obey the same laws exactly, there are certain stages which each has to pass through, viz., a certain period of incubation, then a period of active fermentation, and then a period of subsidence; nay, further still, it is shown that certain infectious diseases are dependent on specific organisms. If septic bacteria are the cause of septic æmia, if the spirilla are the cause of Relapsing Fever, if the *Bacillus anthracis* are the cause of Splenic Fever, the inference is almost irresistible that other analogous organisms are the cause of other infective inflammations and of other specific fevers. It is well known that Cattle Plague can only be produced by Cattle Plague germs, also Glanders Small-pox, Typhus Fever; it is known that the esential nature of Zymotic disease is fermentation, and all true fermentation is caused by the development of organisms. Alcoholic fermentations are caused by the yeast plant; this is simply a fungus, or a microscopic organism; it is capable of self multiplication and endowed with activity the same as other bacteria. These organisms, which serve to initiate the changes in question, are derived from a multitudinous army of omnipresent atmospheric germinal particles, which would seem to be always ready in number and in kind for every emergency. Thus it naturally follows if we can only exclude these special organisms we at once banish all fevers and inflammations which are dependent on them from our world. It will be perceived that issues of immense importance are involved in the consideration of this subject. Dr. B. Sanderson says that in all acute infectious inflammations we have microzymes (a species of bacteria) abounding in the exudation liquids, and also in the blood. Whenever these poisonous germs enter the system, whether by means of respiration, by the food, or by the skin, there they find a suitable medium, they germinate, and at once multiply indefinitely, creating in the system an amount of molecular disturbance (or ferment) in exact ratio to the state of predisposition or degree of susceptibility of the animal. If the quantity be small and the constitution strong and healthy, it may prove innocuous; but not so if the vitality of the subject has been reduced to a low point, having been living in impure air and upon unwholesome food. This brings me to the subject of

Contagion.—Contagion is considered not merely an influence, it is something substantial; it resembles solid, round, or ovoidal corpuscles, often quite structureless. It would appear to be something that is alive, it always presents itself whether suspended or diffused in aqueous or gaseous media, in the form of concrete particles, and never in that of a soluble chemical body or a gas; the power it acquires of originating a diseased process is one which it acquires by virtue of its having been a constituent of diseased but living protoplasm; it may spring from diseased tissue itself, or it may be dependent for existence on the tissue of independent organisms; contagion resembles the unformed ferment, as much as life. Dr. Wm. Roberts gives the name pathophytes to the organisms supposed to produce the phenomena of infectious diseases, and we know that this contagion can retain its virulent and infectious qualities obstinately for long periods, resisting all unfavourable and chemical conditions; it possesses a long enduring dormant vitality, it can get firmly fixed in and accumulate on the walls and floors of stables or other

places, and whenever favourable conditions supervene, its energy is liberated by the action of the proper stimuli, it will then crowd the air and prove itself as intensely venomous at as first. Professor Tyndall informs us that putrefactive organisms fail to produce any deleterious effect upon animal life in its healthy state, that the gases given off during putrefaction are not of themselves infective. Professor Tyndall, in "A Battle with an Infective Atmosphere," shows us this. The element of contagion is an essential part necessary to produce any contagious disease.

Let us for a moment contemplate a case in point. We see a virulent epidemic commence and rage in a certain district ; the more intelligent persons of the place at once set about to ascertain the cause of it ; in the majority of cases it is soon found out, and measures are immediately taken to remove it. In the meantime numbers of men and women have died, and large numbers of others imbibed more or less of the poison germs which have been generated in a given spot—atmospheric action on decomposing matter. Now does the epidemic cease the moment the original cause has been removed? No; and why not? It is because germs of the identical species or type are being self-propagated in each individual affected ; thus each individual is a centre of infection, and a first source of poison-germs. It is invariably found that these infected persons give off those poison-germs that produce the identical disease, and no other disease, whether it be Small-pox, Typhus, Cholera, Cattle Plague, Glanders, or Farcy.

We will now just glance at the part germs play upon wounds, and the method advised to be adopted on this principle.

Wounds.—You have no doubt seen wounds in the feet of horses when at grass assume an unhealthy character, and in which you have perceived numerous live animalculæ called maggots; these are visible to the naked eye, but if the secretion from the surface of any wound, more especially if that secretion has been allowed to accumulate for a certain time, be placed under a strong microscope, it would be found to contain numbers of organisms that the naked eye could not discern ; these are called bacteria. The process is brought about by what in surgical language is called the septic element, this at times gets absorbed, producing septicæmia, or blood-poisoning ; this creates fever and a train of symptoms like a ferment ; its counteractive agent is called antiseptic. The manner in which an antiseptic acts is by depriving the septic germ of its energy, if not also of its life. These septic germs are ever present in the atmosphere around us ; they may not be contagious germs ; joints and cavities may be opened and frightful wounds explored with comparative impunity, if only the air and the parts and all the surroundings are carefully deprived of these septic germs no evil result will follow, no tendency to decomposition, no inflammatory process is set up. The application of the antiseptic must be minute and complete in every detail, the wound, the instruments, sutures, bandages, the surgeon's hands must be entirely enveloped in the spray the whole time. We see that science has discovered agents which can deprive these dust-germs or organisms of their energy and action; amongst these applications are carbolic acid, carbolic spray, or Thmyol, one part to one thousand of water, etc.

Mr. W. Thompson read a paper at the last meeting of the Manchester Literary and Philosophical Society, on the construction of a room or a series of rooms free from germ life, proposed for use in the performance of surgical operations. He said his object in bringing his paper before the Society was to show what he considered to be a valuable application of a well-known principle : viz., that of filtering from the ordinary air the innumerable spores which are constantly found floating about in it, and so to arrange a room or series of rooms in which the air may be rendered optically pure. The practicability of producing and afterwards retaining in a room or rooms of ordinary

dimensions an optically pure atmosphere was suggested to him by the result of a large number of experiments which he had carried on during the last seven or eight years, but more especially from the results obtained from a series of experiments which he commenced about the beginning of this year on the cultivation of different fungi, the spores of most of which are found in large numbers floating about in our atmosphere. The results of these experiments, he thought, conclusively showed that ordinarily large rooms may be constructed and ventilated with filtered air by means of fans, so that flour paste, taken as a test standard, would remain in them free from fungous life; and he believed that such a room or series of rooms might be of great advantage in surgery, perhaps as a means of preventing spores from entering the wounds of patients, and so doing away with or lessening the onus put upon the antiseptic treatment, or in giving a better chance of success in serious surgical operations. The arrangements he suggested on a large scale are a long room or series of rooms in a line, at one end of which should be fitted a fan behind a good filter of cotton wool, a long pipe with a series of Bunsen burners set along it so that when all were lit a line or a sheet of flame would be produced which might be gently passed along and made to play on every part of the floor, walls, and roof of the room, beginning near the end at which the fan works, and going gradually towards the door. By this means any spores adhering to the walls would be destroyed, and no air could pass back to pollute the walls or floors which had been thus purified. A stove might be arranged at the door end of the room by which cotton garments to cover the ordinary clothes of the surgeons and attendants might be heated to a temperature presumably sufficient to destroy or paralyze the vitality of any spores which might have been adhering to them, and where the knives and other appliances used might be previously heated, and where water used in washing the wounds might be previously heated under pressure. With such an arrangement at an hospital it seemed to him that an interesting mode of investigation into some most important subjects might be commenced.

Disinfectants.—These are preparations used for the purpose of cleansing or purifying an impure and infected atmosphere. Although some may hold that it is against principle to deprive ourselves of some of our patients, still I hold it is our bounden duty to prevent, if possible, the recurrence of those diseases that are not amenable to treatment. This I maintain is the great end and aim of medicine, and I feel proud to see this principle so ably enunciated. In the opening address at the Royal Veterinary College the other day, Prof. Axe said, "If there is one subject in which the wisdom of recent reforms in our educational system stands out more boldly than another it is in the science of preventive medicine; it is here that laurels are to be won, but only by the patient, energetic, determined exercise of the highest culture we can command; it is a wide and varied field for the exercise of our powers of thought and one worthy of all our energies." I speak this to the honour of that gentleman and to the College in which he labours. To consider this section of my subject and grasp its full importance, we must remember we are doing battle with an insidious, inscrutable, and deadly enemy; all the knowledge we have gained by late experience has to be brought to bear upon it. There are two lines of tactics for us to take; the one is to openly attack it and destroy it, or else to put on armour, so to speak, and defy it. Let us consider the first proposition. We have ascertained what our enemy is, its nature, from whence it proceeds; we have also ascertained how it is to be met, and how it is to be subdued. We have seen how Professor Lister can rid the wound and all its surroundings of the septic element, and when operations are performed and wounds explored with the care and precision he describes there is comparitively speaking an immunity from danger. If that is true as to wounds, the inference is almost irresistible that the same may be achieved in the air of the stable and

hospital. There is good hope that appropriate antiseptics which kill these germs and bacteria outside the body, may also be found to exert a similar destructive power when they have gained access to the body, and may thus cure or mitigate some of the most serious and common diseases which attack men and animals. I am told by my friend, Mr. Thomas Taylor, V.S., Manchester, that he has achieved a great advantage, and has, he believes, rid an infected stable (in which a most malignant influenza-infection existed) of its infection. He considers that this gas destroys the germs or contagion in the air. In the stable he employed chlorine gas, or more properly speaking chlorous acid gas. He says: "I assure you it is a practical fact that in every place where I used it I had the very best success;" he further says, "it is a poisonous gas and great caution must be exercised; the horses must be removed from the stable during the fumigation, and not put into it again until all trace of the chlorous acid gas has passed away. The mode he adopts is this:—Place a vessel near the ceiling of the stable, some hydrochloric acid in it, drop into it a few crystals of chlorate of potash, make the stable as air-tight as possible; the gas being heavy will roll over the edge of the vessel, descend, and permeate the air throughout the stable, or you may use permanganate of potash instead.

In stables infected with Glanders and Farcy I have found great benefit from the use of coke fires in moveable grates. I light the fires outside the stable in order that the smoke and sulphurous fumes may pass off, and when white hot carry the grate into each stall for half an hour; it not only dries the stalls and the air, but it draws into it and consumes all the infected air in the stable; and an equally satisfactory result has been obtained for the use of crude carbolic acid fumes. I was very much interested in a lecture I heard given lately, at the Polytechnic Institution, London, by an eminent surgeon. He used carbolic acid vapour generated in a glass retort and spirit lamp. He announced it to be the most powerful and most certain destroyer of germs and infectious fevers known. I have used it in several stables, lately in two establishments in which they had lost seven horses each in a few days from Glanders. The manner in which I use it is this.—I pour about a tea-spoonful of crude carbolic acid upon some dull hot (not red hot) cinders on a shovel; if the cinders are too hot the acid ignites and a black smoke ascends; this is useless, the acid is burnt, but in the other case where the cinders are not too hot, a dense white fume is emitted. I carry this into each stall two or three times a week; it would seem that the dense white fume shrivels up and destroys the contagious germs—devitalises them. As to the second proposition, my friend, Mr. Tedbar Hopkins, the President of the Lancashire Veterinary Medical Association, has been in the habit of giving to all the healthy horses in a stable in which Glanders is known to exist, or is suspected to exist, hyposulphite of soda in one ounce doses in their water, and in every case so far as he has tested it, it has proved eminently satisfactory. His idea of it is this, that if you can saturate the system with a medicament that will act as an antidote to the Glanders poison, then such animals will possess an immunity from it and be protected. I speak it to his honour, he is at this moment instituting experiments with a view of proving this point. I am sure the best thanks and best wishes of the profession will be accorded to him.

I have now brought my subject to a close, and in conclusion, I may say, my only motive is to serve my profession. I do not despair, nay, I am sanguine that the time will come when an antidote will be found both for Glanders, Cattle Plague, Hydrophobia, Small-pox, Typhus Fever, Cholera, and the like special diseases. It may be found accidentally, but much more likely by persistent intelligent study. In urging this I am advocating the cause of humanity. Oh, that I could arouse in you a desire, a love for intellectual research, and that such research would attain this consummation! It would be the brightest and grandest triumph ever achieved by man.

EDINBURGH VETERINARY COLLEGE.

A MEETING was held on April 10th, in the Edinburgh Council Chamber, for the distribution of the medals and certificates won in the past session by students of the Dick Veterinary College. Bailie Cranston presided, and among the other gentlemen present were—Deacon-Convener Williams, Councillors Dryburgh, Hall, Turnbull, Tait, Reid, Macdougald; Dr. Donaldson, High School; Dr. Alexander Wood, Councillor Waldie, Leith; Mr. Mylne, Niddrie Mains, as representing the Highland and Agricultural Society; the Principal of the Dick College, Mr. Walley, and the following veterinary surgeons:—Messrs. Dun, Baird, Reikie, Cunningham, Aitken, jun. and sen., Knight, Kirke, Rutherford; Reid, Auchtermuchty; and Steel, Biggar. A number of ladies graced the assemblage.

Bailie CRANSTON, in opening the proceedings, congratulated the audience on the great success which had attended the past session of the College. The students, he said, were of a high class, and they had shown a degree of ability and industry that bade fair to uphold the fame of Professor Dick's foundation. The professors, also, had done their duty well; the institution had been admirably managed; and he believed that students and professors alike could hold their own with those of any other college.

Principal WALLEY then read a report, in which he stated, by way of accounting for the smallness of the number of students eligible for the final examination for the diploma of the Royal College of Veterinary Surgeons, that, owing to the changes which took place in the curriculum of studies three years ago, a larger number of students than usual took advantage of the opportunity then afforded of obtaining a qualification—that of the Highland and Agricultural Society—by a two-sessional course of study instead of three. The success of their students in the two last final examinations for the diploma of the R.C.V.S., also still further diminished the number of seniors, and an unusual amount of personal illness and loss of relatives had taken place among the students during the year.

The distribution of certificates, medals, and other prizes was then proceeded with, among the successful students being the following:—

Charles Rutherford carried off the Dick Trust gold medals for veterinary medicine and surgery, for chemistry, and for anatomy; the Highland and Agricultural Society's gold medal for the best general examination; and the Society's silver medal for veterinary medicine and surgery, for chemistry, for anatomy, for materia medica, and for physiology; the Dick Trust certificate of merit for proficiency in ordinary subjects of matriculation examination, and the Edinburgh Veterinary Medical Association's silver medal for the best essay of the session. George Mitchell obtained the Dick Trust gold medals for comparative pathology and for physiology; the Highland and Agricultural Society's silver medal for botany and comparative pathology. Councillor Waldie's prize, for clinical and practical work, open to second year's students, went to William Calvert; Principal Walley's prizes for clinical and practical work, open to first year's students, to Lionel L. Leach and J. A. Thompson; and, of amateurs' prizes, the Highland Society's silver medal to Frank Watt; and Principal Walley's certificate of merit to J. Brownlie, for proficiency in elementary pathological subjects.

Several of the gentlemen present took part in the presentation of prizes, and in doing so, took occasion to make some remarks befitting the occasion.

Dr. ALEX. WOOD, in presenting a medal for anatomy, offered congratulations on the success of the College, which owed so much to the personal exertions of Bailie Cranston. Those, he said, who knew Professor Dick, knew that he almost seemed able to detect what was the matter with a horse whenever he looked at it. The reason was that he had studied the anatomy

of the horse to a degree in which he had no competitor. A student, therefore, who came out first in anatomy had laid the best foundation for his future profession. It was, he thought, greatly to be lamented that they had to depend on an English board for getting degrees. In the profession to which he belonged, they should not submit to allow their students to be examined by a board in London, or persons commissioned by them: they had their own examining boards in medicine and surgery; and he trusted the Council would never rest till they had an examining board in veterinary medicine situated in Edinburgh, which city was second to none in its knowledge of the branches on which veterinary medicine depended. (Applause.)

Dr. DONALDSON said he had had considerable experience in examining the veterinary students before they entered the College. The examination was not a particularly difficult one, still it was one which showed that those who passed it had received a good education. Year by year the character of the students who had come before him had decidedly improved. There had been a marked improvement in intellectual power, and last year the students who came showed that they had received not merely an ordinary education but a cultivation worthy of gentlemen. He had to add, in connection with this, that he had been very much struck with the character of the young men. They had all shown a determination to do their work honestly and well, and had acted in the most gentlemanly manner; and he had formed a very high estimate of the students who attended the Dick College. (Applause.) He thought such an examination was calculated to do great good to the profession. If the public was aware that veterinary surgeons were also thorough gentlemen and educated men, the profession would rise in its esteem; and if the character of a profession rose generally the fees rose too. (Laughter and applause.)

Mr. MYLNE, who presented one of the Highland Society's medals, said they must all lament the death of Captain Tod, who took so much interest in veterinary matters. The Dick College, he remarked, had long been intimately connected with the Society he represented, and he was sure that under the present most excellent management it would go on and prosper, and be an institution worthy of its founder.

Mr. FINLAY DUN said that in all the large towns of England, even to within a short distance of London, the men who occupied the highest positions, and had the greatest amount of practical tact, and were trusted in regard to the treatment and prevention of disease, were those who had been educated in Edinburgh, and had acquired the Highland and Agricultural Society's diploma, accompanied in many instances with medals such as were now being distributed. (Applause.) This proved the excellence of Scotch teaching. In the teaching of medicine and of veterinary medicine in Edinburgh there was a thoroughness and care, a practical bias given to the instruction, which he did not think was excelled anywhere else; and he thought that under the present management, with the present staff of teachers and such a number of fine young fellows coming up for their preliminary examinations, and with the extended period of study, and the determination to carry out a still greater amount of clinical teaching, the Dick College would continue to maintain its high standard of efficiency, and gather a still larger number of pupils. (Applause.)

At the close of the proceedings a vote of thanks was, on the motion of Principal WALLEY, tendered to Bailie Cranston for presiding.

Bailie CRANSTON, in acknowledging the compliment, intimated that he intended to present to the Veterinary Association a complete set of the *Veterinary Magazine*, ranging over the last thirty years.

The meeting then broke up.

NEW VETERINARY COLLEGE.

ON the 16th April, the presentation of prizes at the close of the session of this College took place in the large hall of the Institution. Major-General Sir Frederick Fitzwygram, Bart., occupied the chair, and amongst others present were—Principal Williams, Professor Vaughan, Professor Kitchin, Dr. Young, Dr. Stevenson McAdam, Professor McAlpine, Mr. Robinson, V.S., Greenock; Mr. Rutherford, V.S., Edinburgh; Mr. Aitken, V.S., Edinburgh; Mr. Balfour, V.S., Kirkcaldy; Mr. Finlay, V.S., Jock's Lodge; Mr. Mills, V.S., R.H.A.; Mr. Kirk, V.S., Edinburgh; Mr. Murray, V.S., Edinburgh; Dr. Mackay, Edinburgh; Mr. McGregor, L.S.C., and others.

Before proceeding to read the list of prize-winners, Principal WILLIAMS said he was glad to be able to state that the College had succeeded in the past year beyond his utmost expectations. No less than ninety-one students had attended the classes during the past winter session. In fact, the success of the College had been so great as to warrant him in carrying out a project which he had thought of for a great many years as one likely to be very beneficial to veterinary science. In his opinion veterinary surgeons, above all men, should have a knowledge of natural history. And his success had been such, as he had just now stated, as to warrant him in establishing a Natural History Chair. (Applause.) He had been fortunate in securing for the chair a gentleman well qualified to fill it. The class would be divided into two—botany being taught during the summer and zoology during the winter course. He felt sure this would enhance veterinary education to a very material extent, and he had no doubt the friends of veterinary science would assist him in carrying out what he believed to be a very valuable idea. (Applause.)

The distribution of prizes was thereafter proceeded with.

Medals given by the Highland and Agricultural Society of Scotland:—

Anatomy—Medal, Mr. James J. Fraser; Certificate of Merit, Mr. Thos. Caldecott.

Physiology—Medal, Mr. James Ingram; Certificates of Merit, Mr. W. O. Williams, Mr. J. J. Fraser, Mr. Geo. Sandeman.

Pathology of the Horse—Medal, Mr. John Carr; Certificates of Merit, Mr. Edward Leach, Mr. T. H. Lewis, Mr. Kay Lees.

Cattle Pathology—Medal, Mr. Edward Leach; Certificates of Merit, Mr. John Carr, Mr. T. H. Lewis.

Chemistry—Medal, Mr. W. Woods; Certificates of Merit, Mr. Graham, Mr. Greenhalgh.

Botany—Medal, Mr. A. N. Michaelis; Certificate of Merit, Mr. Harry Hunt.

Materia Medica—Medal, Mr. Canty; Certificate of Merit, Mr. T. Caldecott.

Two prizes given by Mr. Thompson, V.S., Aspatria, to the two students who pass the best test examination for the first Professional—awarded to Mr. Greenhalgh and Mr. Fred Cottam.

Prize of £20, awarded to the student who passes the best second Professional examination—Mr. Leach and Mr. Lewis, equal: £10 each.

Prize given by a few graduates of the College for "practical work"—Microscope, awarded to Mr. Lewis for best case of microscopical specimens prepared by himself.

Medal given by the Edinburgh Veterinary Medical Society for the best essay on "Equine Conformation"—Mr. Wilson; Certificate of Merit, Mr. Dickinson.

Medal given by a lady for best essay on "Pleuro-pneumonia"—Mr. Lewis.

The CHAIRMAN then addressed the students, giving them some practical

advice as to their future course in life. He said they could not all expect to obtain the blue ribbon in the veterinary profession, as his friend Professor Williams had done (applause); but still by honest industry and zeal each could work out for himself an honourable and useful career.

At the close a cordial vote of thanks was awarded to the Chairman on the motion of Mr. McGREGOR.

GLASGOW VETERINARY COLLEGE.

THE winter session at this institution terminated on April 16th, and on the 17th, 21st, and 22nd, the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The candidates for diploma were also subjected to a rigid practical examination on horses, cattle, and sheep, selected and brought to the College for that purpose. The Board of Examiners included the following gentlemen:—Prof. Turner, Edinburgh University; B. Cartledge, Esq., F.R.C.V.S., Sheffield; W. Robertson, Esq., F.R.C.V.S., Kelso; G. Fleming, Esq., F.R.C.V.S., London; Alex. Robinson, Esq., F.R.C.V.S., Greenock; R. L. Hunt, Esq., F.R.C.V.S., Birmingham. The following gentlemen were also present as *ex-officio* members:—Principal M'Call, Veterinary College; Professors Knox, Cooke, M'Gill, and Macqueen, Glasgow Veterinary College. The diploma of the Royal College of Veterinary Surgeons was obtained by the following candidates:—Mr. John M'Dougall, Oban; Mr. Charles Currie, Brodick, Arran; Mr. Wm. Miller, Glenluce, Wigtownshire; Mr. B. P. Mahony, Templemore, Tipperary; Mr. John Hamilton, Blantyre; Mr. James Storrar, Chester; and Mr. William M'Quiston, Buchlyvie, Stirling. The following students were also examined for the second professional examination and passed:—Mr. Harry Mountney Hill, Somersal, Derbyshire; Mr. A. Milligan, Cornwall, Wigtownshire; A. P. Blue, Mearns; W. Stevenson, Howwood; A. Cochrane, Grangemouth; W. J. G. Johnson, Belfast; Richard Hughes, Llanarmon, Denbighshire; G. Pollock, Bridgeton, Glasgow; R. Stevenson, Newcastle-under-Lyne; T. Douglas, Fenwick, Ayrshire; E. B. M'Lay, Stirling; James Wyper, Glasgow; John Wright, Troon; W. Stewart, Glasgow; Thomas Bowie, Kilbarchan; Mr. Matthew Graham, Glasgow; and Mr. Robert Anderson, Glasgow. Medals granted by the Highland and Agricultural Society of Scotland—Prof. Allen Thomson, London; Prof. Clelland, Glasgow University; and Principal M'Call—and certificates of merit granted by the College were awarded in the different branches of study as follows:—Horse pathology (written examination)—Gold medal (Principal M'Call), Mr. James Storrar; silver medal (H. and A. S. of S.), Mr. John Hamilton: 1st class certificates, Messrs. Mahony and Miller; 2nd class certificates, Mr. Charles Currie. Cattle pathology (written examination)—Gold medal (Principal M'Call), Mr. Storrar; silver medal (H. and A. S. of S.), Mr. Hamilton; 1st class certificates, Messrs. Currie and Mahony; 2nd class certificates, Messrs. William Miller and M'Dougall. Practical examination of horses as to soundness, age, &c.—Gold medal (Principal M'Call), Mr. William Miller. Practical examination of cattle and sheep as to age, operations, &c.—Gold medal (Principal M'Call), Mr. Charles Currie. Junior Division. Horse pathology (written examination)—1st class certificate, Mr. Hughes; 2nd class certificates, Messrs. Wyper, Mountney, Bowie, and Bradley. Cattle pathology (written examination—1st class certificate, Mr. Wyper; 2nd class certificates, Messrs. Hughes, Blue, Mountney, and Bradley. Anatomy (special and comparative)—Gold medal (Professor Thomson), Mr. Thomas Douglas; silver medal (H. & A. S. of S.), Mr. William Stevenson; 1st class certificates—Messrs. Cochrane, Hughes, Rogers, and Creighton;

2nd class certificates—Messrs. Blue, Mountney, Wyper, Bowie, Freeman, and Gosling. Histology and Physiology—Gold medal (Professor Cleland), Mr. James Wyper; silver medal (H. & A. S. of S.), Mr. Harry Mountney; 1st class certificates—Messrs. William Stevenson and Thomas Bowie; 2nd class certificates—Messrs. M'Lay, Douglas, Blue, Bradley, and Hughes. At the close of the examinations Professor Turner stated that, in accordance with the resolution of the Council of the Royal College of Veterinary Surgeons, he had the pleasure of intimating that Messrs. M'Dougall, Miller, Blue, Mountney, Hughes, and Milligan had passed with "great credit."—From *Glasgow Herald*, April 23rd, 1879.

MONTREAL VETERINARY COLLEGE.

THE examination of the students of this college took place on March 27th, in the presence of a large number of professors and friends, conducted by the following board of examiners, appointed by the Council of Agriculture, P.Q. viz:—Alex Waddell, M.R.C.V.S., Quebec; Williamson Bryden, V.S., Boston; Noah Cressy, M.D., V.S., Ph.D., Amherst, Mass.; Arch. McCormick, V.S., Beauharnois; A. O. F. Coleman, V.S., Ottawa; Chas. Levesque, V.S., Berthier en haut; C. J. Alloway, V.S., Montreal; A. J. Couture, V.S., Montreal; Dr. Tetu, Riviere Ouelle, P.Q.

The standard of examination was unusually high, and called for expressions of approbation from the whole board, each student being highly complimented by the examiners on each subject.

The following is the result of the examinations:—

The first year students were examined in botany by Professor J. W. Dawson, LL.D., and the following passed successfully:—

E. J. Carter, Montreal; T. L. Martin, Dorset, Vermont, U.S.; B. D. Pierce, Springfield, Mass.; Chas. Ormond, Milwaukee, Wisconsin; J. B. Green, Yellow Springs, Ohio; R. Price, Montreal; N. P. Hinkley, Buffalo. French department—E. H. Brosseau, M.D., Professor, Victoria College, Examiner—Hilaire Bisaillon, St. Valentine, P.Q.; Honore Bergeron, St. Martin, P.Q.; Albert Trudel, St Genevieve de Batiscan, P.Q.

Chemistry—Professor Craik, McGill University, Examiner—M. S. Brown, Montreal; Wm. Jakeman, Chelsea, Mass., U.S.; Alex. W. Harris, Ottawa, Ont.; E. White, Montreal; Wm. McEachran, Montreal; P. Cummins, Quebec. French Department—Prof. D'Orsonnens, Victoria College, Examiner—Joseph Page, Lotbiniere, P.Q.

Physiology—Prof. W. Osler, McGill University, Examiner—M. S. Brown, Montreal; Wm. Jakeman, Chelsea, Mass., U.S.; Alex. W. Harris, Ottawa, Ont.; Wm. McEachran, Montreal; P. Cummins, Quebec. French Department—George O. Beaudry, Prof. Victoria College, Examiner—Joseph Page, Lotbiniere, P.Q.

The following students, who had fulfilled the full *curriculum* and passed satisfactory written examinations, were examined by the whole board, orally, and having given satisfactory evidence of their proficiency were admitted as members of the profession, viz.:—Isaac J. Miles, Charleston, Illinois, U.S.; W. L. Williams, Argenta, Illinois; Floret S. Thomas, M.D., Hanson, Mass., U.S.; H. D. McMartin, Montreal; Charles Winslow, Rockland, Mass., U.S.; D. Lemay, Bord a Plouff, P.Q.; M. C. Baker, Dunham, P.Q. French Department—Victor Theodule Daubigny, Lachenaie, P.Q.; Henri Audrain, Montreal; Alphonse Levesque, Montreal; Hector Bergevin, St. Timothe, P.Q.

At five o'clock a large assemblage of professional gentlemen, prominent citizens, and the majority of the members of the Council of Agriculture,

assembled in the lecture room of the College, to witness the distribution of the prizes and the conferring of the diplomas. Among those present we noticed the Hon. G. Ouimet, Commissioner of Public Instruction, P.Q.; Hon. S. Norquay, Premier of Manitoba; Hon. L. H. Beaubien, Rev. Father Pilot, W. W. Ogilvie, Esq., Professors Craik, Osler, and Bell, etc. Letters of regret for unavoidable absence were received from Hon. H. G. Joly, Premier of Quebec; Professor J. W. Dawson, Principal of McGill University; L. H. Massue, Esq., M.P., President of the Council of Agriculture; Hon. M. H. Cochrane, and others.

The Hon. G. OUIMET occupied the chair, and presented the prizes and diplomas, afterwards addressing the pupils, congratulating them and giving them advice as to their future careers.

Appropriate addresses were also made by Mr. Waddell, Professor Cressy, Dr. Tetu, Hon. L. H. Beaubien, E. A. Barnard, Esq., Director of Agriculture, Rev. Father Pilot, and others.

Professor MCEACHRAN took occasion to thank the Chairman and gentlemen who had favoured the College by their assistance, especially the Examining Board, many of whom had come a long way, and at considerable inconvenience. He concluded by advising the graduates ever to conduct themselves as honourable men and gentlemen, pointing out the influence their conduct would have on the profession and the College from which they emanated. He urged on them ever to act towards one another, and other members of the profession with whom they would come in contact, on the strictest rules of professional etiquette.

The following students were awarded prizes for proficiency:

Best general examination—A silver medal, the gift of the Council of Agriculture—English Department, W. S. Williams, Illinois, U.S.; French Department, V. T. Daubigny, Lachenaie.

English Veterinary Medicine and Surgery.—Senior class.—M. C. Baker, 1st prize, book; Materia Medica—W. S. Williams, 1st prize, book: Anatomy—Isaac J. Miles, 1st prize, book. French Department—Anatomy—1st prize, A. Levesque, book.

Second year—English—Veterinary Medicine and Surgery—Wm. McEachran, first prize, hypodermic syringe; Materia Medica, Wm. McEachran, first prize, clinical thermometer; Anatomy, Wm. McEachran, first prize, book; Physiology, M. S. Brown, first prize, book.

First year—Anatomy, Charles Ormond, first prize, book.

ROYAL AGRICULTURAL SOCIETY.

AT the monthly council meeting held on April 2nd, the Hon. W. EGERTON, M.P. (Chairman), reported that the following letter had been received and approved of:—

"Royal College of Veterinary Surgeons,
"10, Red Lion Square, W.C., *25th March*, 1879.

"DEAR SIR—The Council of the Royal College of Veterinary Surgeons have duly considered your letter relative to the prizes so liberally given by the Royal Agricultural Society for the encouragement of cattle pathology, and also the recommendation of the examiners for those prizes.

"The Council acquiesce in the recommendation, and suggest that the competition should be open to all veterinary surgeons who have passed with great credit in cattle pathology (written and practical), although they may not have obtained honours in other subjects.

"The Council think that such a scheme would tend to encourage the study of cattle practice among the students. This branch of veterinary

science is carried on with difficulty in London, as cattle are rarely, if ever, sent for treatment to the Royal Veterinary College. The Council, however, have been glad to learn that the Royal Veterinary College have lately made arrangements to send a class of students, under a professor, twice or three times a week to the Metropolitan Cattle Market, and also to the foreign market at Deptford.

"The Council also think, that the extension of time to two years after taking the diploma will act favourably in inducing young veterinary surgeons to study cattle practice after obtaining their diploma.

"I am, dear sir, yours faithfully,

"(Signed) WM. HY. COATES, *Secretary.*"

"H. M. Jenkins, Esq., Secretary,
"Royal Agricultural Society."

The Committee have to report that the services of the Inspector of the Royal Veterinary College have been required in five cases by members of the Society during the past month. The Committee have received from the College the following reports on the outbreaks of disease :—

"*March 23rd*, 1879.

"SIR,—I have to report, for the information of the Veterinary Committee, that during the last three weeks I have made three visits into the country for the purpose of investigating cases of disease affecting either cattle or sheep.

"One of these, and the only one now necessary to be published was on March 8th, when I inspected a flock of sheep, belonging to W. C. Morland, Esq., at Lamberhurst Court, Kent, among which several losses had recently occurred. The flock consisted of in-lamb ewes, 174 young ewes, and 30 old ones, which had been separate during the winter. At the time of my visit nine of the latter had died, and two of the former ; several were ill, and fresh cases kept occurring day by day at shorter or longer periods, after giving birth to their lambs. The malady was precisely of the same nature, and had for its origin allied causes to those which were reported on by my colleague—Professor Axe—to the Committee at its last meeting. As in the instances therein named, so in these, medical treatment proved of very little worth when the disease was fully established. It was therefore to preventive measures that attention had to be given, and especially to such as would lead to a richer and healthier quality of blood being formed for sustaining the organism under the additional strain made upon it by the act of parturition. For this purpose the innutritious grass, upon which the ewes had been mainly kept during the whole winter, was ordered to be discontinued to as great an extent as possible, and its place supplied by good hay, chaff, cake, corn, and a moderate quantity of mangel. Salt was also ordered to be given with the manger-food, and good protection afforded against inclement weather by placing the ewes at night in a warm lambing-yard. These means have proved effective for good, and I have no information of other cases having very recently occurred.

"Enclosed with this report I send a communication from Professor Axe, giving particulars of an investigation he has made into an outbreak of Splenic Apoplexy among animals belonging to Mr. Stratton at Newport, Monmouthshire.

"I am, sir, your obedient servant,

"H. M. Jenkins, Esq., Secretary, "JAS. B. SIMONDS
"Royal Agricultural Society."

REPORT OF INVESTIGATION INTO AN OUTBREAK OF SPLENIC APOPLEXY IN A HERD OF BEASTS.

"This inquiry was instituted on the 14th of March, in response to a communication received from R. Stratton, Esq., The Duffryn, Newport.

"The disease first appeared on the 6th of March, in a two-year-old steer. This animal, with another, occupied separate compartments in a shed adjoining some yards, in which eighty other beasts of all ages were housed. In the early part of January last the steer in question was brought from a farm several miles distant and put up to fatten. In consequence of some temporary derangement of his teeth, mastication was much interfered with, which caused him to lose condition. An examination of his mouth led to the removal of the defective teeth, after which he rapidly accumulated flesh. To this sudden and extreme change in the condition of this animal I attribute the origin of the disease. After death the carcase was removed to an adjoining barn, and there opened in close proximity to a heap of turnips In regard to these turnips, inquiry showed that in the course of the *post-mortem* examination some of them became more or less covered over with the blood of the steer. Of these some were disposed of, but it is to be feared from subsequent events, that blood-tainted roots reached the cows in the yard adjoining the barn, as one of them became affected with the disease, and died five or six days afterwards. I had an opportunity of examining the spleen from the last-named animal, and subsequently of making a detailed investigation into the condition of the blood which it afforded. In this Anthrax organisms (*Bacillus anthracis*) were found in large numbers, and in the spleen Apoplexy, with its attendant disruption of tissue, were strikingly marked. The measures adopted for arresting the progress of the malady had reference to the sanitary condition of the premises, the quantity and nature of the food used, and the general management of the herd.

"Two days after my visit I was informed that another cow had died suddenly, but since that time I have reason to believe that no fresh cases have occurred.

"J. WORTLEY AXE,
"Professor of Pathology and Morbid Anatomy at the Royal Veterinary College."

Mr. DENT wished to call attention to a paragraph in the letter from the Royal College of Veterinary Surgeons, which stated that such a scheme as that recommended by them would tend to encourage the study of cattle practice amongst the students, and that this branch of veterinary science was carried on with difficulty in London as cattle are rarely, if ever, sent to the Royal Veterinary College for treatment. At the present time agriculturists were very much in the hands of veterinary surgeons with respect to the slaughter of animals for almost every kind of disease, and they were told officially, that in the education of veterinary surgeons they very rarely had an opportunity of seeing disease in cattle, sheep, and pigs. A wonderful improvement, it was stated, was about to be adopted by sending the students once or twice a week to the Metropolitan Meat Market and to the Foreign Market at Deptford! It struck him that this arrangement would be on a par with sending medical students to study human diseases by seeing people who attended markets and fairs. He was quite aware that since Colonel Kingscote and other gentlemen had become Governors of the Royal Veterinary College great improvements had taken place, and that efforts were being made to give veterinary students the requisite education; but would it not be possible for these young men to serve an apprenticeship with veterinary surgeons in the country before going the Royal Veterinary College? At present agriculturists were so much under the power of the Veterinary

Department and of veterinary surgeons, that it was extremely important that the study of veterinary science should be more carefully attended to in the future than it had been in the past He made these remarks in the hope that the Royal Veterinary College might propound some scheme to give their students further instruction, and he was confident that the Council would be prepared to render all the support they could both pecuniarily and otherwise.*

Colonel KINGSCOTE, C.B., M.P., agreed most thoroughly with every word which had fallen from Mr. Dent with respect to the great necessity of veterinary surgeons being competent in their profession, especially as regards cattle, sheep and pigs. The power now wielded by these gentlemen under the new Contagious Diseases (Animals) Act was very great, and it therefore behoved the Royal Veterinary College to put that education before their students which would fit them to exercise this power with discretion. As long as he had the honour of being a Governor of that College he would do all in his power to provide that the requisite instruction should be given, but it must not be forgotten that there were great difficulties in the way. The College now undertook to accept patients *gratis*, for the purpose of giving students an opportunity of seeing different diseases in various stages, but that offer had been very slightly responded to. He was not at all sure that the scheme of Mr. Dent, as to students being placed with veterinary surgeons in the country, might not be promoted by arrangement between the Royal Veterinary College and the Royal College of Veterinary Surgeons; at all events he would take care that the subject was brought before the Governors of the Royal Veterinary College.

The report was then adopted.

ROYAL COLLEGE OF VETERINARY SURGEONS' EXAMINATIONS.

AT the several Meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing March 31st, the following students from the Royal Veterinary College were admitted members of the profession :—

Mr. Thomas Pritchard	Hereford.
„ Henry Theakston	Burnley Hayton, Yorkshire.
„ George Sydney James	Frome, Somersetshire.
„ William Timothy Carmody ...	Brompton Road, S. Kensington.
„ Alfred Charles Turner	Croydon, Surrey.
„ James Mills	Hitchin, Herts.
„ Edward Simpson Shave ...	Stamford Hill, Middlesex.
„ John Davies Thomas	Ffoshilyg Llandyeril, Cardiganshire.
„ Joseph Bainbridge	Brough, Westmoreland.
„ William Frank Smith	Downham Market, Norfolk.
„ James Blakeway	Stourbridge, Worcestershire.
„ Titus Littler	Long Clawson, Melton Mowbray.

* The *Live Stock Journal* for April 4th has the following note on this discussion :—"It will be seen from our report that at the Council of the Royal Society on Wednesday last some strong things were said as to the present state of veterinary science and the utter lack of provision at the Royal College for the acquirement of a practical knowledge of cattle. We have more than once referred to the very defective education of many professors of the art. The status of veterinary surgeons is lamentably low, and if no better means are taken to raise it than those exerted by the Royal College, we fear it is not likely to be speedily improved. The proposal to send a 'class of students under a professor' to the Cattle Market two or three times a week is nearly equal to Sydney Smith's suggestion to scratch the dome of St. Paul's to tickle the Dean and Chapter!"

Mr. Henry Shaw	... ...	... Hackney.
„ William Henry McCaldon		... Oxford Street, Manchester.
„ William Robert Emery...		... Totteridge Whelstone, London.
„ William Alston Edgar ...		... Dartford, Kent.
„ Arthur Cox	... ...	... Nottingham.
„ Charles Hedworth Golledge		... Whaddon Trowbridge, Wilts.

Messrs. Turner, Mills, Thomas, Smith, Blakeway, Littler, McCaldon and Edgar, passed with *Great Credit.*

The following students of the same College passed their Second Examination at the Meetings of the Court of Examiners, held April 3rd, 4th, 5th, and 7th :—

Mr. Edward Harvey Kelly.
„ John Trevor Jones.
„ John James Crowhurst.
„ Alfred John Hickman.
„ Edward George Johnson.
„ Walter William Gulleford.
„ George Gartside Mayor.
„ Charles St. Lo. Wilkinson.
„ Walter Jas. Paige Palmer.
„ Edward Slipper.
„ Harry Chrichley Talbott.
„ Stephen Marsh Smith.
„ Thomas Wm. Cave.
„ Frederick Leeds Gooch.
„ Arthur William Briggs.
„ William Caudwell.

Mr. George Richd. Griffith.
„ Donald Gregory.
„ Thomas Jarvis Rippon.
„ George Henry West.
„ Thomas Skilton.
„ Arthur Samuel Auger.
„ Ernest Robert Harding.
„ William Frederick Garside.
„ Henry Thos. Wm. Salmon Mann.
„ George Deveson.
„ Theodore Charles Toop.
„ Sidney Villar.
„ Frederick Francis Woolcott.
„ Alfred Harris.
„ Charles Taylor.
„ Thomas William Lepper.

Mr. Herbert Alfred Towlson.

The following Students passed their First Examination on April 8th and 9th :—

Mr. James Hall Brown.
„ Thomas Bower Cockshoot.
„ Robert James Smith.
„ George Edmundson.
„ William Jas. Williams.
„ William Louden.
„ Arthur Broad.

Mr. Robert Samuel Barcham.
„ John Varney.
„ Edward Henry Scott.
„ Harry Redford.
„ Sydney Bright Price.
„ Charles Jas. Vyner.
„ Thos. Arthur Huband.

Mr. John William Barforde.

AT the several meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow, on April 16th and 17th, the following students passed their final examination, and received the diploma of the Royal College of Veterinary Surgeons :—

Edinburgh Veterinary College.

Mr. William Henry Hill ...		... Sunderland.
„ Geo. Marshall Mitchell		... Garvald Grange, Prestonkirk.
„ Charles Rutherford ...		... Edinburgh.

Mr. Charles Rutherford passed with very great credit.

Edinburgh New Veterinary College.

Mr. Joseph Semple	Aberdare, South Wales.
„ Henry Vaughan Lloyd ...	Denbigh, North Wales.
„ Alexander McKenzie ...	Woodside, Keith, Banffshire.
„ Frederick Bridge	Birkdale, Southport.
„ John Henry Wilson	Edinburgh.
„ Edward Hugh Leach ...	Wigan, Lancashire.
„ Andrew Hume	Wormerlaw, Berwickshire.
„ Frederick Garside	Newton Heath, Manchester.
„ Philias Martial	Port Louis, Mauritius.
„ Edmund Woods Goldsmith...	Shipham, Norfolk.
„ Thomas Herbert Lewis ...	Crewe, Cheshire.
„ Thomas Barritt Stone ...	Swinton, Manchester.
„ John Carr	Parton, Northumberland.
„ Alfred James Jones	Eccles, Manchester.
„ John Legge	Island of Islay.

Messrs. Edward Hugh Leach, Andrew Hume, Frederick Garside, Edmund Woods Goldsmith, John Herbert Lewis, and John Legge passed with great credit.

Glasgow Veterinary College.

Mr. John Baillie Hamilton ...	Blantyre, Lanarkshire.
„ Miller	Glenluce, Wigtonshire.
„ Bernard Patrick J. Mahony ...	Templemore, County Tipperary.
„ James Storrar	Chester.
„ John McDougall	Oban, Argyleshire.
„ C. Douglas Hamilton Currie...	Brodick, Buteshire.
„ William McQuiston	Buchlyvie, Stirlingshire.

Messrs. Miller and John McDougall passed with great credit.

The following students passed their Second Examination :—

Edinburgh Veterinary College.

Mr. William Calvert.
„ C. Henderson Gentle.
„ William Ryan.
Mr. Christopher Black.
„ William Hill.
„ Alexander Grey.

Edinburgh New Veterinary College.

Mr. Harry Josiah Hunt.
„ James Walsh Canty.
„ Thomas Caldicott.
„ George Sandeman.
„ James Wood Ingram.
„ George Edward Nash.
„ William Swithinbank.
„ W. E. Smith Richmond.
„ Arthur Joseph Dobbyn.
Mr. Wharton Wm. Foster.
„ James Chalmers.
„ Frederick J. Richmond.
„ Archibald Munro.
„ George Whitehead.
„ John Richard Simpson.
„ W. Owen Williams.
„ Alfred Mority Michaelis.
„ Edward J. A. Currie Yorston.
Mr. James Johnstone Fraser.

Glasgow Veterinary College.

Mr. John Knight.
" William Stewart.
" James Wyper.
" Thomas Bowie.
" Alexander Milligan.
" Allan Pollock Blue.
" William Stevenson.
Mr. Alexander Cochrane.
" Harry Mountray.
" William J. G. Johnson.
" Richard Hughes.
" George H. Pollock.
" Robert Stevenson.
" Thomas A. Douglas.
Mr. Ebenezer B. McLay.

The following students passed their First Examination :—

Edinburgh Veterinary College.

Mr. Louis William Delacheroris.
" Lionel L. Leach.
" Clement Burston.
Mr. Geo. Marks Davey.
" Thos. James Grum.
" John Rogerson.
Mr. David Jones.

Edinburgh New Veterinary College.

Mr. William Irvin Roberts.
" Walter G. Burnet Dickinson.
" John Sydney Fredk. Cottam.
" Arthur Fredk. Appleton.
" Arthur Plant.
Mr. Thos. Archibald Mitchell.
" Wm. Foster Greenhalgh.
" Frederick Whittaker.
" Harry Scowcroft.
" Fredk. Huntington Osgood.

Glasgow Veterinary College.

Mr. Matthew Graham.
Mr. Robert Anderson.

Army Veterinary Department.

THE following intimation recently appeared in Divisional Orders at Aldershot :—" The Queen has been graciously pleased to appoint Major-General Sir F. W. Fitzwygram, Bart., to serve on the Staff of the Army in Great Britain, with a view to his succeeding Lieutenant-General Wardlaw in command of the Cavalry Brigade at Aldershot." Sir Frederick assumed command on April 1st.

Obituary.

THE following deaths of members of the profession have been reported to the Secretary of the Royal College :—

Mr. Richard Barrow, of Newmarket, a graduate of 1837.
" Griffith Thomas, of Aberayron, Cardiganshire, who graduated in 1868.
" John Harding Hughes, of Swansea, Glamorganshire, a graduate of 1866.

Mr. Robert Prentice, a holder of the Highland and Agricultural Society's certificate, died at Longford, Ireland, on March 3rd. Only a few days before his death, Mr. Prentice was presented with a very flattering address from the principal noblemen and gentry in and around Longford, bearing testimony to his skill, industry, and uncompromising integrity as a professional man, and of his high and honourable feelings in social life.

Notes and News.

CONTAGIOUS PLEURO-PNEUMONIA IN AMERICA.—An American paper states that the State Legislature and Governor of New York State have taken steps to prevent the spread of Pleuro-pneumonia. Ten thousand dollars have been appropriated for expenses, and authority has been given to Gen. Patrick, and Prof. Law, of Cornell University, to resort to stringent measures in order to extirpate the disease. The powers given to Messrs. Patrick and Law are—"To quarantine all infected stables; to slaughter all diseased animals; to quarantine all persons coming in contact with the diseased animals; to disinfect all cars and stables occupied by infected animals, and to prevent healthy animals from being brought into infected stables." The trouble is said to be confined to Long Island yards and stables, so far as is known, and "is the same disease from which the so-called swill-milk stables have been seldom free." The Pennsylvania Senate has unanimously passed a bill to stamp out Pleuro-pneumonia among cattle within the State. The disease is reported at sixteen places in ten counties of New Jersey alone.

SANITARY PRECAUTIONS IN AUSTRALIA.—The Colony of Queensland has formally revoked the Order of April 13, 1876, which prohibited the importation of cattle, sheep, and pigs from the United Kingdom, and her ports are now open to our live stock, subject to conditions of quarantine. Mr. Graham Mitchell F.R.C.V.S., has been appointed Port Inspector for Victoria.

DISEASE IN IRELAND.—According to a return issued on February 25, there were 3,996,027 cattle, 3,989,178 sheep, and 1,467,999 swine in Ireland in 1877, and during the same year there were 643,873 cattle, 631,159 sheep, and 585,427 swine exported from that country. It appears that there were 1,251 outbreaks of Pleuro-pneumonia, by which 2,397 animals were affected; of these 1,984 were compulsorily slaughtered, 213 died, and 182 were reported to have recovered from the disease. Of Foot-and-mouth disease there were 91 outbreaks, and 174 cattle, 16 sheep, and 141 swine were affected by it. Of these 14 cattle and 27 swine were reported to have died. There were 124 outbreaks of Sheep-scab, by which 1,887 animals were affected, and 28 were reported to have died. During the year there were no outbreaks either of Cattle-plague or Sheep-pox. One hundred and sixty-four animals were seized or detained on being presented for shipment, on account of being affected with contagious diseases.

ANIMAL DISEASES IN PRUSSIA.—Prussian live stock statistics show that during the official year 1877-78, 70 horses 1,903 beasts, 1,327 sheep, and 202 swine died of Anthrax; 18,589 beasts, 2,435 sheep, and 2,047 swine of Foot-and-mouth disease; 1,980 beasts of lung disease; 2,848 horses of Glanders; 3,888 sheep of Sheep-pox; and 1,302 sheep of Rot. Within the same period 571 dogs, 6 horses, 132 beasts, 38 sheep and 16 swine were put under control as suspected of Rabies; 137 dogs were killed as unowned and 1,089 as rabid.

CATTLE PLAGUE IN BOHEMIA.—The *Neue Freie Presse* says that the Cattle Plague is becoming more and more formidable in Bohemia. Several hundred places have been attacked by the disease. They are surrounded by a military cordon, and, as far as possible prevented from carrying on intercourse beyond its boundaries. The loss to the inhabitants of the districts is reported to be very considerable, and is not totally represented by that of the cattle slaughtered. Agriculture is in many places at a standstill, the cattle which serve as general beasts of burden being locked up wherever the disease appears. The plague is believed to have been introduced by several head of Russian cattle imported by a Galician dealer.

CANINE DISTEMPER IN SOUTH AFRICA.—I should advise men never to bring dogs of value to South Africa. Foreign-bred dogs invariably die of a hideous and, so far as I know, an incurable form of Distemper. . . . *Apropos* of dogs, a man of fancy could make an immense fortune in South Africa, by establishing a breeding and rearing-house, where pups could be watched through and over the sickness, when they would become of considerable value.—*The Transvaal of To-day.*

STURDY IN SHEEP.—The manager of a large Westphalian estate records the success attending a new method he has adopted of treating Sturdy in sheep, from which disease he has had very serious losses among his flocks for many years past. Formerly he had recourse to trepanning, but rarely managed to remove the cyst and its contents entire, and the number of cases successfully treated seldom reached ten per cent. Instead of attempting this, he now prefers to destroy the contents of the sac *in situ* by the injection of salicylic acid, and the results attending this practice appear to have been most favourable. The exact position of the cyst being determined, he thrusts into it an ordinary trocar, and after drawing off the fluid pushes a piece of salicylic acid about the size of a small bean into the cavity of the sac. Of ten animals thus treated nine recovered without a single bad symptom, though two of them were so far gone at the time of the operation they could no longer move. The death of the tenth appears to have been due to an ill-directed thrust of the trocar, which unfortunately penetrated the brain substance to a considerable depth.—*The Farmer.*

DISEASES OF THE BISON.—It is whilst in the low country that bison sometimes suffer from cattle diseases, through feeding in jungles used by infected domestic cattle. These epidemics are exceedingly fatal. The three most dreaded are called in Canarese: *Dod-róga*—"The great sickness;" *Kei-by-róga*—"Foot-and-mouth disease;" *Cheppay-róga*—"Shoulder-blade disease." The following are the symptoms of each:—*Dod-róga.*—The beast coughs once, the ears immediately droop, it stands listless, and will not graze. The coat becomes staring, violent purging commences, the evacuations being mixed with bloody mucus; there is much running at the nose and mouth, and the beast drinks to excess. Flies deposit their eggs about the mouth, eyes, and ears. It becomes rapidly weak and staggers. In from two to four days death generally ensues: some may live for a week. No effectual remedy is known. Of beasts attacked not more than about ten per cent recover; those in best condition are the chief sufferers; old and poor cattle occasionally survive an attack. Beasts that have once been attacked are said never to have the disease again. It is highly infectious. Calves drinking infected beasts' milk die. The stench from infected cattle is intolerable. The lowest castes of Hindoos (Holoyas and Madigas), and also wild hogs, eat the flesh of the dead cattle, without any ill effects; but tigers will not touch it, or even, it is said, kill beasts suffering from the disease. Infected herds are frequently driven into jungles where tigers are known to be, as it is superstitiously believed by the natives that if the tiger can be got to kill a beast the disease will leave the rest. It is probable that the disease is on the wane when the tiger recommences killing amongst them. The tiger doubtless discriminates between infected herds and those not infected by the stench of the former. This disease prevailed among the bison in the Billiga-rungun hills in 1867, and the Strolagas estimate that it killed two-thirds of them. I saw many of their remains when I first shot in the hills in 1869. Just as I was leaving India, in April 1877, it again broke out amongst them, and I have no doubt has decimated them. It was introduced, on the latter occasion, by the famine-stricken cattle driven to the jungles for pasture, when there was none elsewhere. *Kei-by-róga.*—In this disease the mouth of the infected animal becomes sore, frothy, and suppurates, and

thus renders grazing difficult. The beast is observed to limp and lick its feet, which are found to swarm with maggots—the hoof having suppurated and become loose. Frequently the hoofs drop off. It is generally severe for a month. It is much less fatal than *Dod-róga*; like that disease, it is most destructive amongst young animals in good condition. Perhaps twenty-five per cent of beasts attacked die. There is no known remedy, but a collar of pieces of wood is occasionally put on to prevent the beast licking its feet. Infected cattle are also kept standing in puddles as a preventive against maggots. I have shot bison suffering from this disease. *Cheppay-róga* is confined to beasts under three years of age, especially calves, and is invariably fatal. Beasts quite well one day will be found to have a shoulder or hind quarter swelled and puffy in the morning. The affected part feels spongy to the touch, and the beast limps. The stomach also swells. Death follows within six or eight hours. The flesh of the dead animal looks black and inflamed.—*Thirteen Years Among the Wild Beasts of India.*

GLANDERS IN THE FRENCH ARMY.—A severe epizoöty of Glanders has broken out in the Cuirassiers at Lyons. No less than £16,000 is stated to be the value of the horses died or killed. General Farre, commanding, has sent the regiment away to Valbonne.

THE ELEPHANT IN INDIA.—Mr. Sanderson, officer in charge of the elephant establishment in Mysore, says that in India the remains of an elephant that had died a natural death are scarcely ever met with. He has never seen such remains himself, and never met any one amongst the jungle tribes or professional elephant-hunters who had done so except at a time when murrain visited the forests. "Bones," he writes, "would not decay for some years, and teeth and tusks would survive for some time; yet not a single pair of ivories has ever, as far as I know, been found in the Mysore jungles during the time I have known them." He can give no explanation of this fact. How long the wild elephant lives is uncertain; but Mr. Sanderson thinks it attains to at least one hundred and fifty years.

SHEEP AS BEASTS OF BURDEN.—In the *Colonies and India* we find a note respecting the employment of sheep as beasts of burden. In Eastern Turkistan and Thibet, for instance, borax is borne on the backs of sheep over the mountains of Leh, Kangra, and Rampur on the Sutlej. Borax is found at Rudok, in Changthan, of such excellent quality that only 25 per cent. is lost in the process of refining. The Rudok borax is carried on sheep to Rampur, which travel at the rate of two miles a day, but, notwithstanding the superior quality and the demand for it in Europe, the expenses attending its transport seriously hamper the trade, which, but for the sheep, would hardly exist at all.

CATTLE PLAGUE IN RUSSIA.—According to information thus far received at the St. Petersburg Ministry of the Interior from the Governors of the various provinces of Russia, the loss occasioned by the Cattle Plague throughout the Empire is expected to exceed 30,000,000 roubles during the past year.

Correspondence, etc.

THE NEED FOR APPRENTICESHIP.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Being at present a student of veterinary medicine, maybe it is premature on my part to make any suggestions upon the movements of the profession: but I trust my love and zeal for its welfare will be accepted

as an excuse. In this month's issue of the VETERINARY JOURNAL, the transactions of the Eastern Counties Veterinary Medical Association are reported, and one of the conclusions arrived at was—"That no student should be admitted to any of our colleges unless he is able to produce a certificate showing that he had served an apprenticeship with a qualified veterinary surgeon for two or more years." This, I think, is a very sensible conclusion, as it would not only impart early practical knowledge, but would be the means of getting men into the profession whose natural abilities would be in accordance with their choice, as they would have good opportunity of judging, during their apprenticeship, whether such was the case or not. Some time since I met a friend who is a veterinary surgeon: on inquiring as to where he was practising, he informed me that he intended giving up the veterinary profession and entering the Royal College of Surgeons, as he found he very much disliked the employment which constitutes the every-day life of a veterinary surgeon. I need hardly add that he had seen no practice previous to entering the Royal Veterinary College; had such been the case, his money and time would not so needlessly have been spent.

I am, dear sir, yours very respectfully,

"NIL DESPERANDUM."

ADVICE WANTED.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Having a young friend who has graduated from St. Pancras, anxious to embark in practice, I should be extremely grateful if you would kindly give me your opinion on the enclosed advertisement, from this month's *Veterinarian*—

TO VETERINARY SURGEONS.

TO LET, with Immediate Possession, a SMALL INN, with STABLING (Valuation very low indeed). An excellent opening for a veterinary surgeon. Apply to W. A. TODD, Crown Brewery, York.

Do you think a member of the profession would find it advantageous to unite himself in this way, with a publican business and his profession? I am most anxious about my friend, who is a nice, gentlemanly young man, but unfortunately with small means.

I would not have troubled you, but "two opinions are better than one." So, having found the advertisement in your contemporary, I have their opinion, or it would not have been inserted therein, of course. Now I wish you to kindly advise me with your opinion, and at same time how shall my friend designate himself—"nondescript"? or in full—veterinary surgeon, licensed victualler, farrier, and blacksmith, horse breaker-and dealer, with more power to add, etc.?

I remain, etc.,

"AN ADMIRER OF THE VETERINARY ART."

MORTALITY AMONG IN-LAMB EWES.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I see in this month's Journal that Professor Axe has been investigating for the Royal Agricultural Society, a disease which affects in-lamb ewes, and I notice in his report that he says Down sheep suffer most from the disease. This may be so, but we have lost a large number of the Lincolnshire breed.

The symptoms are the same as Professor Axe describes, and I have

made many *post-mortem* examinations, and in every case the ewes have two or three lambs.

The farmers who have given their ewes plenty of "trough" food whilst on turnips have never had better luck than this season, but those who have done the ewes badly have suffered severely.

The treatment I used to adopt was to have the ewes removed from turnips, giving plenty of good trough food, with tonic medicine.

The ewes have plenty of fat about them, and it was at the commencement of the lambing season that we had the greatest losses.

Should you think this will interest the readers of the Journal, I shall be pleased if it finds a place in the next issue.

I remain, dear sir,
Yours faithfully,

Lincoln, *April 9th*, 1879. W. STANLEY CARLESS.

THE FELLOWSHIP DEGREE.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Mr. Robert Ward, F.R.C.V.S., and others who have very recently advocated the possession of high educational attainments to be an essential for admission to the Fellowship degree, cannot surely know at what value the scholastic qualifications of the new Fellows (by examination) have been assessed by the officiating member of the College of Preceptors, or probably more would have been thought and less written upon the subject.

A sense of humility forbids that I should quote from the Preceptor's report; let it suffice that the statements therein contained are highly encouraging to those aspirants for the title of "Fellow" who may be diffident of their educational qualification, as they are the reverse of flattering to those whose *entrée* has been achieved by examination.

I am, sir, faithfully yours,

Liverpool, *April 5th*, 1879. RICHARD S. REYNOLDS.

To the Editor of the VETERINARY JOURNAL.

SIR,—In reading through the April number of your valuable journal, I notice a letter written by Mr. Ward, respecting the Fellowship Degree of the Royal College of Veterinary Surgeons. If your space is not too limited, will you allow me, as a veterinary student, to make a few remarks upon that important subject, and also upon the position of the veterinary profession. Mr. Ward says, "The degree should certainly be the means to mark its possessor as a fit associate for gentlemen." If none but those had the honour to possess it, few, I fear, would compete; for how many scientific and educated men enter our profession? Very few indeed—and why? Because its members are treated as blacksmiths—as illiterate, uneducated men. It will be an impossibility to raise the veterinary to an equal position with the medical profession, or introduce into it educated men, if we can have no protection. We cannot distinguish ourselves without some assistance; and assistance we must have, or the Fellowship, combined with every other degree, will be comparatively useless.

Mr. Ward is quite right when he says that the matriculation examination should be farther advanced in educational matters; but I think the majority of men, members of the profession, are quite equal to, if not better than the profession itself.

A man is a veterinary surgeon, a M.R.C.V.S.—what position does he occupy? Certainly not that of a gentleman. Will he ever be thought such?

I fear not: certainly he will not until a great deal of the quackery is abolished; for, allow me to say, that this is the stumbling-block over which we are continually falling, and it must be removed. This could easily be accomplished were we to unite, and fully resolve with a firm determination to eradicate the evil.

There is an old proverb which says, "Remove the cause and the disease will cease." This is certainly very applicable in this instance. You may possibly ask, what is the "cause"?—the answer is clear—quackery; as also to disease?—viz., illiterateness and ignorance. The former is applicable to unqualified practitioners assuming the title of veterinary surgeon, and farriers or shoeing-smiths treating the diseases of animals, and in so doing injuring the health, and very often placing the lives of valuable creatures in jeopardy. The two latter terms, which are almost synonymous, need no explanation; they are on a level or equal to, as Mr. Ward rightly says, "the dregs of the profession." We must therefore remove the quackery. Various methods have been adopted, but they have, comparatively speaking, failed, because there has been no unity of strength. We have been pulling in opposite directions, struggling against unseen barriers; but I hope soon all will be one mind, and once more assist in carrying into effect the old motto, "Unity is strength."

Mr. Ward, at the close of his able letter, wishes it to be fully understood that "none but Fellows are invited." Scarcely a united feeling, I think. Perhaps the business is to be strictly private; if not, why not allow all members and students to be present?—we all hope ultimately to become Fellows, whether scientific or illiterate ones: the former I hope, for I am sure it would greatly injure our feelings to know that we had taken any part in depreciating the value of that degree now held by such scientific gentlemen.

I remain, dear sir, yours faithfully,

A "STUDENT AT THE LONDON VETERINARY COLLEGE."

THE ENGLISH AND CAPE TROOP HORSE.

To the Editor of the VETERINARY JOURNAL.

SIR,—Much as the English bred horses are praised for their stamina and fleetness, there is no record, I believe, of an English horse having endured such a fatiguing journey as that related by Captain Alan Gardner, in a private letter, dated from Rorke's Drift, January 26th, 1879, and published in the daily papers of Saturday, March 22nd. After sending an alarm to the little band at Rorke's Drift, he started for Utrecht, a distance of eighty miles. After having ridden the same animal through a most dangerously rough country for many miles, and after being twenty-four hours in the saddle, he says: "I tried to get a fresh horse but could not, so rode on;" and he reached his destination. He then writes, "I was over thirty-six hours in the saddle on the same horse, who, beyond a few occasional mouthfuls of grass, had no rest or food. . . . . I calculated that I rode nearly 140 miles, including the morning's work. After a night's rest I set off with my guide . . . . across country, and reached this place the following day, on the same horse." Now such a feat of horsemanship and endurance should be chronicled; and I thought it ought to be so recorded in your Journal; and, moreover, the feat may be no very extraordinary one, as others may be reported. If such hardy animals cannot stand the ravages of the Cape sickness, we must not be surprised to hear that our English troop horses suffer badly, should the sickness open "an engagement." Yet it is to be hoped that with such efficient veterinary skill as the army possesses, measures of prevention will prove successful. However, doubtless a little of

the disease may be seen, so that our army colleagues may offer us and the Cape authorities valuable information of its true nature, treatment, and sanitary laws tending to prevention.

I am, yours very truly,
ROBERT WARD, F.R.C.V.S.

London, *March 24th*, 1879.

CONTAGIOUS PLEURO-PNEUMONIA IN THE UNITED STATES OF AMERICA.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The slaughter of cattle at Liverpool shipped from America, per steamer "Ontario," has caused considerable excitement on both sides of the Atlantic, and has been the means of seriously interfering with the great trade in cattle recently developed between this continent and Great Britain. The cattle shipped per "Ontario" came from Indiana, Illinois, Michigan, and Ohio, with a few from this city—and I am confident they were perfectly free from *Pleuro-pneumonia Contagiosa*, and, in fact, they had never been nearer than four hundred miles to the place where Pleuro-pneumonia is reported to exist. It appears to me that the English authorities have been unnecessarily harsh in their restriction in regard to a trade which must ultimately benefit the people of Britain as well as Canadians and Americans.

I am, dear sir, yours truly,
ANDREW SMITH,
Principal of the Ontario Veterinary College.

Toronto, *March 10th.*

[There can be no doubt whatever as to the existence of Contagious Pleuro-pneumonia in the United States, though to what extent it may prevail there does not appear to be any very reliable evidence to show, owing to the absence of trustworthy veterinary inspection in many of the States, and the extreme paucity of qualified veterinary surgeons. As will be seen from our "Notes and News" in the present issue of the Journal, the malady is present in at least several States of the Union, and this alone is sufficient justification for our government considering that country as infected, and acting accordingly. To have done otherwise would not only have been dangerous to our home stock, but would have been unfair to other scheduled and not more seriously infected countries. We have only to glance at the history of this terrible disease, and to note its diffusion from a small region in central Europe to every part of the world, to convince ourselves that, given a brisk cattle trade in America, it will soon invade those States yet free from it. As to whether the cattle brought by the "Ontario" were affected with the malady, that is altogether beside the question, for the reason above stated; but we can scarcely believe that the veterinary authorities here who reported as to its presence could be mistaken, considering their position and great experience, and the ample opportunity they had for satisfying themselves as to the facts.—ED. *V. J.*]

OBSTINATE SKIN DISEASE IN HORSES.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—In an article entitled "Obstinate Skin Disease in the Horse," in your February number, a common and troublesome affection is well described by Mr. Queripel; but there are one or two points on which I think I can offer some information of a useful nature. 1st. As to the breed of horse usually affected. In fifteen years residence in various parts of the Bengal Presidency, I have seen a very large number of cases of this disease affecting al

classes of horses used in the service—"Walers," Stud Breds, Country Breds, Arabs, Persians, "Capes," &c.—and, moreover, on turning to the records of the Remount Depot under my charge, I find that in the official year ending 31st March, 1878, the number of cases per cent. of strength of each class of animal was, "Walers" 2·86; Stud and Country Breds, 4·94. Ten or fifteen years ago, in batteries and regiments the majority of the horses were stud bred, and the disease was then as rife as now.

As to treatment, I have found the application of petroleum, mixed with oil, cure the most obstinate cases of even three or four years' standing. It must be applied carefully to every affected part; or better, perhaps, to the whole body, care only being taken in the latter case to increase the proportion of oil. The animal shows symptoms of annoyance when the application is first made; but the irritation soon passes off; and, moreover, the itching accompanying the disease passes off with it. So much so, that my usual practice has been to turn affected animals loose in a paddock after applying the dressing, although previous to the application they had to be kept tied by head and heel ropes to prevent abrasion of the skin by biting, rubbing, etc.

Depilation results, but the hair is speedily renewed, and the skin becomes soft and pliable.

Where the disease affects the mane and tail, the dressing may have to be repeated several times before the skin becomes soft and of its normal thickness; and until this happens the disease cannot be considered cured. It is also necessary frequently and carefully to examine the skin, and if any papulæ are found, to at once apply a small quantity of pure petroleum with the point of the finger, as these small enlargements mark the beginning of the disease, and are easily dispersed in this manner.

I have also tried acetic acid, kerosene or paraffin oil, and other applications, with fairly good results, but have not been so successful as with petroleum.

I have not been able to detect any animal parasite, even with the microscope, and incline to the opinion that a vegetable parasite is the cause; but I have never traced a clear case of transmission of the affection by contact.

Yours truly,

GEORGE A. OLIPHANT, F.R.C.V.S., Royal Artillery.

Hapur, N.W.P. India, *March 13th.*

"CONTAGIOUS PLEURO-PNEUMONIA AMONG AMERICAN CATTLE."

To the Editor of the VETERINARY JOURNAL.

SIR,—Without for a moment thinking of criticising the editorial in the March number of the Journal, some explanation relating to the subject may be worthy of perusal. I will, however, acknowledge that when I read the report of the landing of the cattle from the "Ontario," that the animals were found to be diseased, that I thought this resulted from the extreme exposure to cold when in transit from the West to the sea-board, and to contaminated air when on board ship. I am informed by persons who have been on board after the cattle have been confined but a few hours between decks, and before sailing, that the escaping air is extremely hot, and in one instance when at sea it was necessary to have the hatches closed ninety hours, only four of a lot of one hundred and sixty head were landed, the others being suffocated and thrown overboard. The statement that "it has been known for more than thirty years that the disease is positively the same as that we are so

painfully familiar with," etc., is not disputed by those who know anything in relation to it. A visit was made by the Massachusetts Board of Cattle Commissioners in 1862, to the famous Skillman Street Stables, in Brooklyn, New York. We found a large number of cows, some sick with the acute disease, and there were several stump tails, resulting from inoculation. A cow in the last stage of the disease was killed for our inspection, and the examination showed a typical case of the same malady which existed in Massachusetts. The owner of the distillery gave a history of the first outbreak there, which was as follows :—"A cow brought from England to furnish milk for the passengers of the ship "Washington," in 1848, was sold and taken to the distillery stable. She soon sickened and died, after which a large number contracted the disease, which had continued to the time of the above-mentioned visit."

The Commissioners in their report say : "If New York, New Jersey, and Pennsylvania would adopt similar measures to those in this State, it would be one of the most effective modes of securing the whole community against this disease, which, if allowed to prevail, would endanger the neat stock in the country, and greatly deteriorate the most substantial food of the people." The explanation alluded to in the commencement of this article is that little danger is to be apprehended from cattle reared in the Western States, from the fact that Pleuro-pneumonia does not exist there ; and as the territory where the disease has a foothold is not adapted to the rearing and fattening of cattle, there is slight risk of those for export becoming contaminated. A strong point in evidence that the malady does not exist in the Western States, is the fact that there arrive at the Brighton and Watertown cattle-yards an average of three thousand Western cattle every week, a large number of which are slaughtered at the abattoir. The writer in his official capacity has often visited the cattle-yards, and has witnessed the removal of the lungs of the slaughtered animals at the abattoir, and not in one instance has a case of lung disease been found in a Western animal. There is also an inspector appointed by the Board of Health of the city of Boston, who daily inspects both the living and the slaughtered animals ; and he informs me that it is exceedingly rare for him to find a diseased animal, excepting from external bruises received in transportation.

It is more than twelve years since a case of Pleuro-pneumonia has occurred in Massachusetts, yet the Commissioners have been upon the alert, fearing another outbreak, not from the districts alluded to, but from Canada. We had already suffered severe losses by the introduction of Epizootic Aphtha imported from England to Canada, and scattered broadcast to New York and to the New England States. True, there is a law compelling a quarantine of eight days on all cattle arriving at Canadian ports ; eight days ! worth as much as eight corn-stalk fiddle-sticks for an orchestra. Where the passage is only twelve or fourteen days, and the period of incubation is forty, there is sufficient time to infect the cattle for hundreds of miles around.

In conclusion, the new Order of the English Government will redound to the benefit of the cattle interests of this country. It will, or ought to, teach the States where the malady exists to stamp it out by united, vigorous action of these States ; or, if the power was transferred to the national Government, in twelve months contagious Pleuro-pneumonia could be exterminated in this country.

I am, dear sir, yours truly,

E. F. THAYER, V.S.

West Newton, Mass., U.S.A.

"VETERINARY PROGRESS."

What Next and Next?

To the Editor of the Veterinary Journal.

Sir,—It would be a pleasing theme to review the course of events in our profession since the obtainment of our charter in 1844, so as to bring under notice the various panacea which have been prescribed for the benefit of our profession, and then sum up the measures which have been adopted and the results produced by them.

It is not my intention in the present paper to make an elaborate exposition of the many valuable suggestions made by estimable men from time to time, or revert to the objections ever offered by contentious, carping individuals, who seem to have an eye only to find fault with the efforts of others, but who are affected with singular barrenness of better suggestions to propose in their stead.

I shall content myself with simply alluding to a few of the many matters which have engaged the attention of the profession during the last decade. *1st.* The institution of the practical examination of the student in addition to the ordinary examination of the Court of Examiners for the diploma. *2nd.* The preliminary, or matriculatory examination of the youth when he enters college. *3rd.* The arranging of the examinations into three sections, enabling the student to concentrate his whole attention on separate subjects. *4th.* The extended curriculum of studies at the college to three years, or five terms. *5th.* The examiners of the Court of Examiners elected for a term of five years instead of for life, as hithertofore. *6th.* The institution of the fellowship degree. *7th.* The granting of a new charter enabling us to hold our annual meeting every third year in Edinburgh, instead of being confined to London, in accordance to provisions of previous charter. *8th.* The power given to the whole body of the profession to record their votes for members of Council by voting papers, instead of having to attend personally in Red Lion Square on the first Monday in May in each year for that purpose. *9th.* The agreement entered into between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society of Scotland, to discontinue the examinations of the latter, and the absorption into the body corporate of those gentlemen who hold only its certificate. *10th.* The supplemental charter now being obtained to enable us to carry this out, and thus realizing the grand idea—a consummation so devoutly to be wished—viz., "*A United Profession.*"

These ten subjects are a few of the measures which have been worked out by the Council of the Royal College of Veterinary Surgeons. Several of them were ripe for carrying when our present noble and worthy President came upon the scene, and which, by his influence and admirable business tact, have been carried irresistibly to a successful issue. I could expatiate upon the great good which must accrue from each of them separately, but I feel sure it must be self-evident to every member of my profession. Most of these measures I have earnestly advocated in my writings, my addresses, and my votes for the last twenty or thirty years. Although much has been done "*there is still more work to do.*" We are now a united body, we have no body of men antagonistic to us; we can now apply to Parliament for an Act, and in that Act we can ensure for ourselves all that we can reasonably desire.

What does the Profession require?—In the proposed Act of Parliament I suggest that we stipulate for four things. *1st.* The penal clause. *2nd.* The apprenticeship clause. *3rd.* The preliminary or matriculatory examination of the student to be placed in the hands of the Royal College of Veterinary Sur-

geons, instead of, as now, in the hands of each teaching school. *4th.* The Court of Examiners to be composed of veterinary surgeons only.

The Penal Clause.—This clause, it must be understood, cannot be obtained in a charter. A charter is a legal document granted by the Queen and her ministry, not by Parliament; the Queen has not the power by the constitution of England to inflict a fine—not even half-a-crown—on any one of her subjects. The clause in an Act of Parliament would give a magistrate the power to inflict a fine or imprisonment on any unqualified person adopting the name or title of Veterinary Surgeon; the fine would be fixed by the Act, probably at £5 or £10 for each offence; but it must not be misunderstood that such person is not in the least precluded from practising by this penal clause. He can call himself by some other title, and if he is a shrewd and clever man, can and will command more or less practice, and in some cases will continue, as he does now, to deprive the qualified man of more or less income, and in some cases beat him entirely out of the field: hence the absolute necessity of the qualified man being made a thoroughly practical man, as well as a scientific man.

The Apprenticeship Clause.—This clause I esteem of far greater importance than the one above. I know there are some who entertain other views on this subject; but having an extensive acquaintance with, and knowledge of the opinions of my professional brethren in every part of England, Ireland, and Scotland, I believe if the whole of the profession could be polled to-morrow, eight out of every ten would record their vote in favour of the apprenticeship clause. The veterinary surgeon, however well educated he may be, labours under an immense disadvantage throughout life if he has seen only the practice which comes under his observation at college; but if he has been accustomed to and inured to the work of attending sick and lame horses, etc., and is bound to produce an indenture of apprenticeship showing that he has served three years with a veterinary surgeon when he enters college, such a one (provided always that he possesses a good sound English education and a good intellectual capacity) is the most likely to bring credit upon himself and upon the profession to which he belongs. The late Professor Spooner has often said in my hearing, "We do not profess—nay, it is impossible for us to give a youth a sufficient practical instruction during his period of study at college."

Extract from the late Professor Spooner's speech, page 510, "Veterinarian," 1870:—"The question of the propriety of introducing an apprenticeship clause was brought before the Council shortly after the charter was obtained, but the corporate body had no authority whatever with reference to the education of the pupil prior to his entering either of the colleges, and there was great opposition offered to the insertion of such a clause in the bye-laws, and the proposal fell to the ground. At that time he was opposed to the introduction of the clause; not only did he think it was not expedient, but he also felt that the Council had no such authority. But subsequent reflection and experience had induced him to alter his views as regards the advisability of a youth being placed under the tuition of a practising veterinary surgeon prior to his presenting himself for his final examination for the diploma of the college; and he was the more convinced of the correctness of his present view from what had recently occurred in the Council, viz., the resolution to establish practical examinations. He had advocated such examinations for more than a quarter of a century, but he had seen so many difficulties in the way of carrying them out, not only with reference to pathology, but also with reference to anatomy, that he had hesitated to make any stir in the matter. The Council had, however, now decided that a practical examination should take place, and the pupil therefore must in future be practically educated. The question then arose, how was he to obtain that education? *It could not be*

imparted efficiently in the collegiate institution. No doubt, some who entered the schools without any previous instruction would, by diligently applying their minds to the study, become ornaments to the profession. He could relate several such instances, but still it was unquestionably better that a pupil should be competent to undergo a practical examination. At the Royal Veterinary College there were rarely less than seventy patients, and operations were being constantly performed; but how could manipulative instruction be given to 100 or 150 young men at once? *He therefore looked to the profession at large to assist the young men, and not to shirk the responsibility of taking them as pupils before they come to college.* It was the duty of the profession to afford every facility to those who wished to acquire a practical knowledge of the veterinary art, and to render the expense attending its acquisition as little as possible."

The Preliminary or Matriculatory Examination.—This, as it is now carried out, is considered exceedingly unsatisfactory and objectionable. There is no concerted action between the four teaching schools; each school appoints its own examiners, and settles the extent and the nature of the examination, subjects to be examined upon, &c. Now it shows, upon the very face of it, that the examinations will be unequal; this has been the case all the way through. Until lately the principal of one of the schools was his own examiner; and we all know it is against human nature that he would reject his own students and throw away his own living. I have been present at some of these examinations, and feel bound to admit that the examinations were conducted with perfect fairness and in a satisfactory manner. At the opening of the last session at Camden Town, a youth admitted, who had betaken himself to one of the schools in Scotland, was examined there, and passed his preliminary examination; he applied for his certificate, but was refused until he entered the college. He then presented himself at another school in the same city, was examined and passed; he applied for his certificate, got it, then he returned to London with this certificate and entered that school. This may be considered sharp practice, but it is just the kind of thing the system is open to. If the preliminary examination were in the hands of the R.C.V.S. the appointment of examiners would be such that the test would be equal at each of the four schools. Any sharp practice, such as that above referred to, would be provided against and be impossible. The advantages of this are self-evident.

The Court of Examiners to be composed of Veterinary Examiners only.—I am fully aware that there are some of my professional brethren who still hold that we cannot yet, if we ever shall be, in a position to, do without the assistance of extraneous help at the chemistry table; that there is not one man in the whole profession competent to fulfil the duty of examiner at that table. I say, I think this speaks very badly indeed of my professional brethren if it is so, but more especially of those who are our teachers. I have no hesitation whatever in saying that there are numbers of young men who have distinguished themselves in chemistry whilst at college, who could very soon so rub up their scientific chemistry as to be competent to undertake the duty, and quite equal to the teaching. Let us only remember that we have been in existence about one hundred years. Are we still too young to be entrusted to try to walk alone? are we still to be kept in swaddling clothes, in leading strings, for another century? I would here refer to n authority—a far greater authority than any authority now living in England—I allude to the late Professor Spooner. He said: "With regard to the Court of Examiners itself, it was said the time had not yet arrived when the college could dispense with the prop and pillar of support which it had availed itself of since its commencement; but surely men could now be found within the body of the profession who were competent to determine as to the qualifica-

tions of a candidate for the diploma of the college. He would be the very last man to advocate the removal from the Court of Examiners of any of these gentlemen who had so ably supported them at the physiological, chemical, and materia medica tables ; but at the same time he would say, that so long as that pillar of support remained bound to the tree so long would it require its aid. Remove it and the winds might blow it, and it might yield to some extent, but its roots would become strengthened by virtue of its self-supporting power and then you could throw off the extraneous aid. *No more, then, would he admit members foreign to their body after this period* to the Court of Examiners. He thought the first members of the Court to be dispensed with were those who examined on physiology and anatomy. As to chemistry and materia medica, the probability was that it would be a longer period before the services of such gentlemen as were now examining upon those could be dispensed with.

During the period I was President of the R.C.V.S., I presided over thirteen examinations, of three hours each, in London and in Edinburgh. I made a practice of leaving the presidential chair and sitting at each table a quarter of an hour at a time. I listened attentively to every question asked and every answer given, and I feel bound to state that the questions asked were such that every student ought to be able to answer. I closely observed the nature of the different questions in chemistry, materia medica and physiology, and I candidly and freely admit here that I did not see that there were any matters of such profundity or abstruseness but what could be readily and fully grasped and understood by an intelligent and fairly educated veterinary surgeon who had kept up his reading upon scientific subjects. Besides, we know that at college there are some students who take a greater pleasure in studying chemistry and materia medica than others ; these excel in that particular study, and when they know that by making themselves extra proficient in those subjects they may be called upon to fill the high and honourable post of examiner—an inducement that does not now exist—this laudable aspiration, inciting and impelling numbers of students, would of itself be a powerful lever in raising our profession to a still higher status. I attended also the examinations of the Highland and Agricultural Society's Board, and carefully listened to every question asked and answered at the different tables. So it will be perceived I have had opportunities of forming an opinion on this question above what the average veterinary surgeon has, and I do not hesitate in stating most emphatically that the Court of Examiners could, without any diminution of its efficiency, be in future composed of veterinary surgeons only, and that it would tend to exalt our position as members of a scientific profession.

I am, sir, yours obediently,

THOMAS GREAVES, F.R.C.V.S.

NOTICE TO CORRESPONDENTS, Etc.

Several Communications and reports of Societies are unavoidably held over until next month.

"Esto quod Videris."—Your remarks are too personal, and, if published, would only give occasion for an acrimonious and unprofitable correspondence.

E. D.—Your request shall be attended to, and in all probability granted.

Communications, Books, Journals, etc., Received.

Communications have been received from R. Ward, London; T. Greaves, Manchester; R. Poyser, the Carabineers, Umballa; R. J. Dawson, London; "An Admirer of the Veterinary Art"; F. F. Collins, Principal Veterinary Surgeon, Simla; "Nil Desperandum"; Professor McEachran, Montreal; W. Stanley Carless, Lincoln; N. Almond, Colchester; R. S. Reynolds, Liverpool; G. A. Oliphant, Royal Artillery, Hapur, India; Professor J. W. Wehenkel, Brussels; E. Dele, Antwerp; E. F. Thayer, Massachusetts; B. Eggleton, Bishop's Stortford; "Esto Quod Videris"; W. H. Coates, London; W. F. Barrett, Holbeach; J. Mills, Royal Artillery; "A Student."

Books and Pamphlets: *F. F. Collins*, A Glimpse at Horse-Breeding; *G. W. De*, Heeres-Verpflegung; Report of Minister of Agriculture for Dominion of Canada for 1878; *J. B. Russel, M.D.*, Report on Outbreak of Enteric Fever in Glasgow; Annual Report of the Veterinary Department of the Privy Council Office; *Dr. J. M. Wehenkel*, Etat Sanitaire des Animaux Domestiques.

Journals: *American Veterinary Review; Annales de Méd. Vétérinaire; Archives Vétérinaire; Il Medico Veterinaria; Lancet; Nature; Revue Vétérinaire; Recueil de Méd. Vétérinaire; London Medical Record; Der Thierarzt; National Live Stock Journal; Journal de Med. Veterinaire et de Zootechnie; British Medical Journal; Archiv für Wissenschaftliche Veterinärkunde; Live Stock Journal; Journal of the National Agricultural Society of Victoria; United Service Gazette; Wochenschrift für Viehzucht und Thierheilkunde; Agricultural Gazette; Mark Lane Express; Farmer; North British Agriculturist; Journal of the Royal Agricultural Society; Index Medicus; Medical Press and Circular; L'Echo Vétérinaire.*

Newspapers: *Scotsman* (2 copies); *Asian Sporting Paper; Montreal Herald* (2 copies); *Longford Independent; New York Tribune; Lahore Civil and Military Gazette; Montreal Gazette; Edinburgh Courant; Cambrian News.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, Veterinary Journal, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.